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ARTICLE I.

THE TREATMENT OF BRIGHT'S DISEASE.—By CHARLES W. PURDY, M.D.

Bearing in mind that the chief function of the kidney is the removal of nitrogenous waste from the system, it is possible to lay down a few general rules for management of the whole class of diseases ranged under the term of albuminuria, especially when they reach a point in their progress which seriously embarrasses the function of the organ. It may be useful first to point out a few of these general measures applicable to the whole class, before proceeding to deal with each lesion in particular and its special indications.

First in importance, then, may be reckoned the diet of the albuminuric patient. It was formerly held, and is still held by some, that the loss of albumen represented a waste of tissue that must be made up by the boldest resort to nitrogenous diet, else

the general condition of the patient would sink, and exhaustion become a grave complication of the case.

Such doctrine is a very dangerous one to teach, and much more so to practice,above all in nephritis. In the first place, it is a fact beyond dispute that the quantity of albumen contained in an ordinary repast of food is equal to the loss by the kidneys in ordinary cases for a week ; hence the loss of albumen by the kidneys unless very extreme, does not cause the alarming waste that many are led to suppose. The rapid anæmia of Bright's disease is not alone due to waste of albumen, but to the overcharging of the blood with tissue waste which renders that fluid unfit for healthy nourishment. The pernicious effect of still further loading the blood with highly nitrogenized foods not only increases the evils it is intended to remedy, but it is pretty sure to lead to the most dangerous of complications, namely, that of uræmia. It must never be lost sight of in the treatment of damaged kidneys, the important part always played in the retrograde metamorphosis of tissue, especially the nitrogenized principles in their relation to the urine. Fothergill remarks that " these nitrogenized matters do not merely go towards tissue formation, and then by a process of oxidation pass from one form of hystolitic product to another. They do not break up in tissue disintegration into creatin creatinin, tyrosin and other early products of tissue decay and then pass on into uric acid and urea. Besides being in themselves powerful narcotic poisons,causing coma and convulsions they also form within the animal organism ferments, which exercise no unimportant action.

The kidneys being the chief means of removing nitrogenized waste, it is clear that the presence of unusual quantities of waste nitrogen in the blood maintains these organs in a highly active functional state, and hyperæmia of functional activity leads with certainty to tissue change. Nor, indeed, is it essential in these cases to introduce large quantities of nitrogenous foods into the system, even with the view of repairing tissue waste. A very small portion is necessary for such purpose, especially if the patient is not taking much active exercise (which he should not do if suffering from albuminuria). We all take vastly more nitrogenous food than is necessary for tissue repair. Note, for instance, the

robustness of the highlander, whose condition of health will compare favorably with any race of men with which we are acquainted, yet his food consists for the most part of hydrocarbons, the nitrogenous forming an insignificant part.

We now know that urea is formed not alone from disintergrating tissue, but also largely from splitting up of albuminoids in the liver, and it is time that we applied to the therapeutics of renal disease the lesson which physiology teaches.

We would suggest as a diet for the albuminuric patient as follows: In the main it should consist of farinaceous articles, fish, vegetables, and fruits. Meats must be indulged in sparingly; very small quantities of lean meat alone being permissible. Soups should be prohibited, even the conventional beef-tea and beef extracts. Eggs should be excluded from the diet in albuminuria. It has been shown by Lehmann and Stockvis that when the white of egg is introduced into the circulation, not only does that escape by the kidneys, but a surplus of other albuminoids accompanies it. Senator says the lesson will apply to meat as well as eggs. "Any excess acts in two ways injuriously—by increasing unnecessarily the amount of urea and other waste products in the blood; and also by pouring into the system an overplus of peptones or other albuminous matters, which may simply have to be excreted and cause irritation in the act." Cheese acts in a similar manner, and should not be used. Vegetables may be used freely, and the only ones to be avoided are the leguminous ones which are too rich in albumen. Fats may be used as freely as the condition of the stomach will permit. Milk is one of the best articles of diet, but should not be too exclusive as it does not furnish the elements of diet in a suitable proportion. The stomach should not be overloaded, it being an occasional observation that even in healthy persons albumen appears in the urine after a large meal. Small meals, more frequently repeated than usual, is a good rule to follow in such cases. Great discrimination is necessary in the matter of drinks in Bright's disease. Alcohol in large quantites, especially in concentrated form, is generally believed to be injurious. If alcohol be permitted at all it must be well diluted, and it is preferable to give it with some alkali or neutral water, as Vichy or Apollinaris water in excess. Al-

cohol stimulates the interstitial changes in the kidneys if used in quantities, hence the allowance should be very small—not enough to disturb to any extent the general circulation. Claret, Sherry and Marsala are the least objectionable. As to malt liquors, they should, as a rule, be excluded, though it is stated that lighter pale ales or Bavarian beer are nearly free from objectionable qualities.

Next in importance to diet in the management of albuminuria, as a general measure, may be reckoned the clothing and care of the skin. The cutaneous system performs a compensatory office to impeded renal action, of no small importance. Urea, we know, is constantly present in the cutaneous secretions, as are also phosphates, chlorides, and sulphates of the alkalies. Funke estimates that 157½ grains of urea pass off in perspiration in 24 hours, which is equal to one-third the amount excreted by the kidneys themselves. The same observer reckons the fluids eliminated by the skin to vary from 2 to 29 ounces per hour, and solids for the same time from 14 to 107 grains. Now, the skin, in cases of albuminuria, unfortunately, for the most part is dry and inactive. The beneficial effects of establishing a free diaphoresis in acute nephritis, are very well known to all who have had much experience in managing that disease. It frequently determines the crisis, and leads to convalescence, with improvement in all the symptoms.

It fulfills the most important indication in the treatment of inflammatory disease, namely, by relieving the kidneys of much of their work. It "puts the parts largely at rest," and permits the impeded or exhausted forces to regain their tone. Thus, the skin should be subjected to the most systematic care in all forms of albuminuria—no less so, in fact, than in the treatment of phthisis. Chills to the skin should be most carefully guarded against, as they lead to hyperæmia of the kidney resulting from internal congestion, which always follows contraction of the cutaneous vessels. Besides this, when the action of the skin is checked there is greater accumulation of nitrogenous waste in the circulation, which, as we have seen, is another cause of hyperæmia. Warm flannel undergarments must be insisted upon from head to foot, from which no variation must be permitted; even

in bed flannel night dresses must be worn. The care of the feet must be no less rigid; heavy soled shoes and boots should always be worn, lined preferably with some warm, non-conducting substance, as cork or felt. The patient should be taught to follow carefully all changes of climate with appropriate external clothing and wraps, and all garments becoming damp from exposure should immediately be changed for dry and well warmed fabrics, and this is doubly important in case of the feet and extremities. There is no more constant or frequent cause of nephritis than exposure to cold; and when the vital powers are lowered, as they are usually in all forms of albuminuria if of any continuance, the susceptibility of the patient to the pernicious effects of cold are very much increased. The depressed, partly paralyzed vasomotor nerves of the skin leaves the cutaneous system almost at the mercy of sudden changes of temperature; hence are requisite the most rigid precautions to prevent exposure under these circumstances. It may be, and indeed it most frequently is the case, that the kidney is not damaged in its entirety; but parts of the organ continue to exert their function compatible with the continuance of life, perhaps indefinitely so long as the lesions do not extend. It therefore becomes of no less importance to guard against causes which are likely to light up an extension of the disease to the healthy structures, than it is to arrest the morbid process in the parts already invaded; and in no way may such objects be more subserved than in the care of the skin through proper attention to clothing, and the avoidance of exposure to vicissitudes of climate. It is proper that we here allude to the general influences of climate on Bright's disease. The first thing to be noticed, is the fact that in the two extremes of temperature—the arctic and torrid zones—albuminuria is rare. In extremely cold climates the great activity of the respiratory system takes the place of diminished action of the cutaneous system, a compensation which relieves largely the kidneys of the extra work which would otherwise be thrown upon them. Consequently we find the greater tendency to diseases of the air passages and respiratory organs under such circumstances. In the tropics, on the other hand, we find the greatest activity of function in the cutaneous system and bowels, and as a consequence

the tendency to disease is more largely to these organs. The kidneys are but little taxed in the tropics, and Bright's disease there is almost unknown. We must make one exception to this statement in the case of amyloid disease, which sometimes does arise in hot climates. It must be remembered, however, that amyloid disease is an affection whose primary seat is almost never in the kidneys; and moreover, it owes its origin to well known constitutional causes, with which the kidney is not primarily concerned. The temperate zone, then, especially in locations proximate to large bodies of water, where changes of temperature are frequent and extreme, is the natural home of Bright's disease.

Whether through the effects of constant cooling of the skin, through the influence of the cool, moist atmosphere of winter, or the exposure to sudden changes which we find so common under these conditions, we get in the first place a gradual leading up to interstitial change, or in the other the sudden precipitation of nephritis, which seldom occurs either in the tropics or in the land of snow and ice. The climate most suitable in these cases should be equable, warm, and, if possible, dry. Dickinson says the mean temperature for the year should be between 60° and 70° F. for a patient suffering from Bright's disease. He supports the assertion by a tabular statement showing the mortality from Bright's disease in the British army in the various stations over the world, as well as in the larger cities. He shows, for instance, that in some of the cities of England and Scotland the mortality from Bright's disease reaches as high as 1 in 200, while in Rome it does not exceed 1 in nearly 5,000, and in the Riveria it is unknown, so far as its origin there is concerned.

In America the southern interior of the continent presents the greatest advantages—such as Mexico. In Europe, the Mediterranean coast seems to give the best results; Rome, Cairo and the south of France may be mentioned in particular. Those engaged in practice near this chain of great inland lakes, where the climate is especially unfavorable, should send their patients to the southern interior, at least during winter, as it would prolong the lives of patients materially.

Nearly all forms of renal lesions, at some stage in the progress, are benefited by the use of diuretics. The proper selection of

diuretics, however, is a matter of the utmost importance; for some of them, if administered inopportunely, without reference to the case, stage, or remedy itself, are capable of doing very serious mischief.

Diuretics may be classed under two heads, as to their mode of action—first, those that act by increasing the general blood pressure in the vessels; second, those that act locally on the kidney circulation and renal epithelium. Belonging to the first class are such remedies as Digitalis and Convallaria Majalis, which increase the power of the heart's action, and as a consequence cause greater fullness in the arterial vessels. Fluids, also, by increasing the volume of the circulating fluid in the vessels, increase the blood pressure and quicken the urinary secretion. Thus it is that most mineral waters act. To the second class belong such agents as juniper, buchu, and some of the resins. Their action is stimulating to the renal epithelium, and hence as a rule they are contraindicted in the acute inflammatory conditions; their judicious employment following the subsidence of the scute action is often productive of much benefit. Where a simple diuretic is indicated, devoid of stimulating action on the renal epithelium, waters as pure as obtainable are very serviceable. It would seem that the purer the water—that is to say, the less organic matter it contains—the more efficient is its diuretic powers. I find the administration of several glasses of distilled water daily to act efficiently in such cases I have been much pleased with the results which follow the use of Waukesha waters, when simple diuretics are indicated as above referred to. With the Silurian water I have had the most experience, and for general purposes of the kind I think it cannot be too highly commended, especially as we have it so near at hand. Carlsbad waters have considerable reputation in Europe. From some experience with the imported natural water as we get it here, as well as with the Sprudel salt, I have not found any special advantages.

It is a well known fact that the addition of alkalies and some neutral salts of the alkalies increase the diuretic powers of water, owing doubtless to their stimulating osmosis; and in the selection of mineral waters this fact is well to bear in mind. The alkaline properties of Vichy water commends it especially for use

in cases of gouty history, which we find so frequently to precede the more chronic form of the disease, and the Buffalo Lethia waters are even more valuable in such cases.

ACUTE PARENCHYMATOUS NEPHRITIS—Whatever differences of opinion may obtain in other renal lesions as to their true pathology, there can be no question as to acute nephritis. The process is distinctly inflammatory, and must be met with energetic antiphlogistics. The more early this fact is recognized and the more promptly measures are shaped accordingly, the more successful will be the result of its management.

Two prominent indications present themselves in dealing with acute nephritis. First, to secure depuriation of the blood through stimulating the action of the skin and alimentary canal; and second, to limit the inflammatory process in progress in the renal tissues. The most efficient means of exciting the action of the skin in these cases is the *dry hot air bath*. The steam or Russian bath, or the baths devised by Simpson, nor yet the hot water bath in these cases must not be ranked in efficiency with that of dry hot air. There should be no mistake on this point. Though it may be a more convenient method to wrap the patient up in hot, moist blankets and leave him to steam for an hour or two, the results will not be so satisfactory in producing elimination of fluids by the skin, and moreover the practice is not so safe as the employment of dry hot air. The advantages of the latter are that evaporation takes place more rapidly in dry than in moist air, hence more rapid perspiration is induced. Again, the bodily temperature is not elevated near so high with dry hot air as by means of steam for the heat of the body is obstructed in its egress and accumulates more rapidly than in dry air. I have induced the most copious perspiration for an hour or more by means of the hot air bath, without elevating the bodily temperature more than one and a half to two degrees, and it seldom raises the temperature more than the latter. It is well known that the Russian bath, so-called, usually increases the bodily temperature three to five degrees, the pulse is accelerated to 150 or even higher, with a corresponding effect on the respiration. Should the case be complicated with heart trouble, such disturbance of the system is highly injudicious, and if the patient is threatened

with uremia the great increase of temperature is more apt to precipitate convulsions. In all cases, then, the dry hot air bath is preferable; it promotes a more thorough action of the skin, without seriously disturbing the pulse, respiration, or bodily temperature, and moreover, it is far more comfortable to the feelings of the patient. The application of the hot air bath is not necessarily attended by more inconvenience than the hot pack, much less the hot water bath. The simplest contrivances often meet the necessties of the case quite as well as all the paraphanalia of the modern Turkish baths. The patient may be placed between woolen blankets, carefully tucked in about the edges of the bed and the neck, leaving the head out of course.

Plenty of heavy quilts are next thrown over the patient to retain the heat. A small alcohol pocket lamp is next filled and placed on a tray near the bed, fitting over which a small sized stove pipe rising about three feet from the floor conducts the heat beneath the blankets beside the patient. To secure a more equable distribution of heat about the patient an oval crib formed by joining a few half barrel hoops with half a dozen laths, may be placed over the patient which also serves to keep the blankets from weighing heavily on his body, and secures quite a roomy air chamber beneath the bedclothes. By such means a patient may be subjected to free diaphoresis for an hour or two with the least attendant exhaustion possible. The patient need not be removed from his bed—an important consideration if there is much prostration. I do not claim any originality for the above method of employing the hot air bath; but I do claim advantages for its use over any and all methods of producing diaphoresis with which I possess any knowledge. In cases of acute nephritis it should be employed daily for an hour or longer, according to the urgency of the symptoms and the strength of the patient. It will be found after the patient is made to perspire for half an hour or so, that the artificial heat may be stopped, and perspiration will continue freely for a long time, more especially if some warm drink is administered. He may then be quickly dried with warm towels and comfortably arranged in bed. Jaborandi, or its active principle, pilocarpine, may be tried and will sometimes act very freely as a diaphoretic. Its uncertainty, however, and occasionally its de-

pressing effects render the hot air most to be relied on. Free catharsis should next claim attention, and the selection of the purgative will be determined by the strength and age of the patient as well as the urgency of the symptoms. While not advocating a continuous course of purgatives for the relief of nephritis, we favor beginning treatment with a brisk purge, which besides in itself beneficial, it very much increases the action of other remedies, for by unloading congested blood vessels, it is well known that it relieves stasis of blood and promotes osmosis and absorption. As a rule we should begin with free catharsis, then regulating the bowels subsequently with milder aperients as the most conservative course.

In addressing our treatment to the kidneys themselves, all authors are agreed that dry cupping is highly beneficial. The cups should be quickly moved when the skin becomes reddened, and the process may be repeated several times during the day. Following the cupping large warm poultices should be applied to the lumbar region continuously, and their efficiency may be much increased by adding sufficient mustard to keep the skin irritated. In a later stage more permanent and decided counter irritation is beneficial, as by the use of croton oil liniment, but blisters of fly, or turpentine are on no account to be employed for obvious reasons.

The question of the use of diuretics in acute nephritis is one which has been warmly disputed, and calls for most careful consideration. Dickinson does not sanction their use unless it be in the form of spring water. Even with regard to digitalis he says: "I have learned to doubt whether this sure diuretic is so certain not to add to the congestion of a recently inflamed kidney, as I formerly supposed. It adds to the force of the heart and I think I have sometimes traced the discharge of blood with the urine to its use."

Grainger Stewart, on the contrary, says: "I have been accustomed since student days to see diuretics freely employed and frequently with great advantage." Roberts claims for the exhibition of acetate of potass a uniform increase in the quantity of urine, a subsidence of inflammatory action, and a subsequent exemption from uræmic attacks.

In examining this question critically, it may be useful to remember the method whereby nature determines the crisis in cases which take on a favorable course. If, for instance, a case of nephritis is left to itself and no medication employed, either complete blocking up of the renal tubules will occur, and death follow from dropsy, or uræmia, or spontaneous convalescence will follow upon most copious diuresis. Nature's most potent avenue of relief then is clearly through diuresis. If we can bring about this result without increasing the existing damage to the kidneys themselves, the agents which will accomplish this are clearly those upon which we should rely. Bearing in mind the pathology of the lesion we seek to remedy, the secreting tubules are blocked up with various products of diseased or disorganized epithelium which line these tubes. Stagnation in the packed tubules prevents filtration of urine, and there can be no improvement till the obstruction be removed. Obviously, if we use such diuretics as juniper or squill, which stimulate the renal epithelium, we run the risk, not only of adding to the renal congestion, but also of hastening the disorganization of renal epithelium, which would increase rather than diminish the blocking up of the tubules. Fortunately, we have a class of diuretics which quicken the filtration of urine in the malpighian coils, through their power of augmenting the general blood pressure without any stimulation of the tubular epithelium. Agents which directly increase the power of the heart, of which digitalis is the representative, are the ones indicated. Fluids also, such as water and salines, lead to the same result as heretofore pointed out. The aqueous elements of the urine are in the main filtered through the malpighian coil, an arrangement peculiarly fitted for that purpose; increase of blood pressure then results in a more copious filtration of urine within the glomerule. The urine is forced downward washing before it the obstructing débris, or products of inflammatory action, without exerting a deleterious action on the tubules themselves or their lining epithelium. We believe, then, that a judicious selection of the diuretics referred to are among the most efficient agents at our command. Such are the measures in the main most useful in the management of acute parenchymatous nephritis; and it is not too much to assert that by far

the larger majority of cases managed in accordance with the principles dwelt upon will terminate favorably.

It is scarcely necessary to add to what has been said already on the question of diet, except perhaps to say that the most rigid adherence to the rules laid down before, should especially be carried out in acute nephritis. Milk diet, more or less varied, should be adhered to, to the exclusion of meats. The patient should be confined to the bed from the start, and kept there until the acute symptoms have quite passed away.

Complications of several kinds are apt to accompany acute nephritis. The most alarming of these is uræmia, which in this lesion is most apt to assume the tonic convulsive form. The physician should ever be on the watch for this in treating nephritis, for its appearance is usually preceded by well defined premonitory symptoms, which should be taken advantage of in time. If the urine diminishes in quantity to four or six ounces in twenty-four hours, we know that much waste material is accumulating in the blood. The urine may even be fairly voluminous, but containing daily a minimum of urea, and this we know is apt to lead to a dangerous accumulation in the circulation. Possibly vomiting may occur and become obstinate, and more or less headache, and dullness or drowsiness supervene. Symptoms like these must be met by prompt measures, as they portend the near approach of convulsions. The hot air bath should be resorted to, and its use prolonged till the most copious diaphoresis is secured; following which a sharp purge should be administered. Among the agents advised for the uræmic attack itself are bromide of potash, chloral hydrate, chloroform, and hypodermics of morphia. The latter we should hesitate to employ, though Prof. Loomis, of New York, and even Ringer, indorse it. We should administer full doses of chloral hydrate, either by the rectum or hypodermically, and if the convulsions were still persistent, should resort to venesection, at least as a temporary measure. It has been well known for many years that bleeding gave the best results in cases of puerperal convulsions; even before the cause was understood. We now know them to be uræmic, and if bleeding will arrest the uræmic convulsions of pregnancy, there appears no

reason why it should not likewise be equally serviceable in similar eclampsia of nephritis.

Acute chest affections, when unfortunately they complicate nephritis, constitute a class of troubles the most difficult to manage. Their intractability is due to the fact that they are induced by a poisoned condition of blood, incapable of furnishing the elements conservative of tissue destruction; as well as being incapable of removing the products of inflammatory change. To the usual antiphlogistic measures employed in these inflammations, must be supplemented the energetic use of all the measures tending to eliminate, through the various compensating channels, the retained tissue waste circulating in the blood; and these have been fully dwelt upon heretofore.

Dropsy frequently constitutes one of the most obstinate symptoms of acute nephritis; and occasionally becomes so extreme as to call for special measures for its relief. Its appearance signifies that the aqueous elements taken into the system are obstructed in their elimination. In other words, it points, as a rule, to grave obstruction in the secreting structure of the organs. Sooner or later, if the organs do not resume their function, the dropsy calls for relief, else crowding of the organs within the chest may lead to death through gradual asphyxia, or impeding of the heart's action; or local erysipelas or gangrene may be set up through compression of tracts of the surface, usually of the limbs. Puncture of the skin in places will relieve the tension of the parts, but such measures often lead to very troublesome ulcerations and sloughs, and, as a rule, are to be avoided.

There is less objection to draining away the surplus fluids from the abdominal cavity, or even the chest, by means of the trochar or aspirator; and this may be done as a temporary measurse, often affording great relief to the patient. It must not be lost sight of in this, as in all complications of nephritis, that the only permanent relief must come through a re-establishment of the renal function; and while special means are being taken for the relief of the various complications as they arise, the general measures laid down for the improving of the kidneys themselves must at all times be resorted to with a firm hand. If this be neglected, any seeming success in relieving a threatening com-

plication is only followed by the greater misfortune of discovering later a general condition which will baffle all our efforts to relieve. If dropsy become urgent, and the general condition of the patient is not much reduced, we may often obtain good results from evacuent treatment. In such cases American hemp may be used often with the happiest results. It should be given in repeated doses, till nausea is induced, and then its use suspended for a few days. The diuresis produced by its action is sometimes enormous. From a few ounces of dark red, smoky urine, passed in twenty-four hours I have known it to be immediately increased to several pints in a few hours, and the dropsy to disappear in two or three days. Sometimes it acts upon the bowels as well, producing copious watery stools. If, fortunately, free diuresis is once established, its continuance may usually be kept up by the other measures advised; and if so, the patient enters upon convalescence. Chronic nephritis should claim some attention before speaking of the other renal lesions. Rarely beginning as such, chronic nephritis is usually the result of a more or less prolonged acute attack. The inflammatory action having largely subsided, the tubular epithelium remains more or less damaged, with a tendency to fatty degeneration. Pretty much the same general principles should be observed in treating the chronic form of nephritis as the acute, except that greater caution is necessary in the employment of evacuants, as the general condition of the patient is usually reduced. Purgatives, for instance, should not be pushed, as they are likely to increase the anæmia so frequently present.

Bartels lays great stress on diaphoretic treatment. He says: "The methodical employment of diaphoresis constitutes, in my opinion, the most reliable means of reducing the troublesome and dangerous dropsy; it is also the only treatment from which I believe myself justified in expecting a curative action similar to that which it exerts on the acute parenchymatous inflammation of the organs."

We must bear in mind that in the chronic form we are dealing with a deep-seated malady, whose changes are less active than the acute form, and any measures employed must be continued systematically over much longer intervals of time in order to se-

cure any permanent results. Diaphoresis, if conducted with these facts in view, through the agency of hot air baths, in keeping with the strength of the patient, will seldom disappoint our expectations unless the disease has progressed so far that resolution is impossible. I have used them daily for weeks without obtaining the exhausting effects attributed to them, and never without the most marked improvement in most of the symptoms of disease. Thick woolen textures should be worn next the skin, which not only insure warmth of the skin and invite the blood to the surface, but also absorb the prespiration and prevent the sudden check of the latter by changes of temperature. We are not as closely restricted in the use of diuretics in this as in the acute form of the disease. The free washing out of the tubules is most important as it promotes a more healthy action of the renal epitheluim, and tends to restore the damaged condition of the gland. Some of the spring waters already mentioned may be taken, say three to six glasses daily. The citrate or the acetate of potash are very favorable diuretics, as they are in the acute form. Whichever of these salts are employed they should be given in full doses. As a rule, the more recent the case, the more may be expected from the use of these salts, though they often act happily also on cases of long standing. If the urine persists in scantiness, containing considerable dèbris, it is often beneficial to employ some of the diuretics which are more directly stimulating to the kidneys themselves, as the contra-indications to their use are not so strong here as in the acute form. They are preferably combined with some of the potash salts. Juniper and squill are of doubtful utility unless it should be in cases of great chronicity. I use frequently in these cases a combination consisting of compound fluid extract of buchu and pareira brava with acetate of potash. Most cases of chronic nephritis, sooner or later, require the use of iron on account of advancing anæmia. It is best to combine with the iron, or give at the same time, some alkalie salt. I believe it was Trousseau who first pointed out the advantages of this in all cases of anæmia. The beneficial effects of a warm dry climate mus tnot be lost sight of. If the patient can afford to avail himself of such valuable aid to

treatment, it should be strongly advised above all during winter months.

Granular Degeneration.—It must be conceded, I think, that when the kidneys become the seat of interstitial fibroid growth to any serious extent, it constitutes a condition from which recovery of the damaged organs is well nigh hopeless. The fibrous tissue growth not only impossible to reach and remove by remedies, likewise causes destruction of the tubules so complete that restoration is not within the reach of therapeutics as at present known.

It would seem from this at first sight, that the outlook of a case established as renal fibrosis must be a hopeless one. Fortunately, this is not absolutely so, as far as prolonging life, and even arrest of the disease is concerned. Granular degeneration of the kidneys, as we have previously observed, is the most tardy and chronic in its course of all kidney diseases, extending sometimes over fifteen or twenty years, under favorable circumstances, ere the entire organ becomes sufficiently implicated to put a stop to its function or impede the same incompatibly with the continuance of life. Dickinson remarks, "The organ is invaded by slow, and often hesitating approaches, and we cannot but admit the importance of any measures which, by removing the tendency to the disease, may save as much of the gland as is yet intact."

When we reflect that the great majority of these patients are beyond middle age, in fact well advanced in life, and the symptoms are not necessarily incompatible with a fair degree of enjoyment of life, the outlook seems less gloomy. Probably the greatest influence capable of being brought to bear in limiting or even arresting the disease, may be looked for in climate. An even temperature, with a mean between 60° and 70° F., with a dry atmosphere, are the desired objects to be attained. Dickinson has paid much attention to the influence of climate over granular kidneys. He says, "I have sent persons with whom the disorder, though giving rise to no symptoms which could unfit them for traveling, yet has been advanced and threatening, to winter in the Riveira, the warmer parts of Italy, or Egypt, with the issue of early general amendment, and such certain

though slow mitigation in the special symptoms as to show that the advantage to be expected from change of sky is at least as great in renal as in pulmonary disease. Cure is a word to be used with caution, but I have seen little less: the albumen reduced to a trace, and perhaps that inconstant, and the general health brought up almost to its original level."

If the disease is fortunately discovered in its early stage, then the patient should be sent to some such climate as before indicated. Rome is spoken very highly of, as is Cairo. The disease is almost unknown in the former place. I am not aware what results have been recorded from sending patients to the more favored climates of our own Continent. I believe the Mexican climate to offer the most desirable conditions for residence. Take, for instance, Durango, where the extremes of temperature are 60° and 80°; the atmosphere is dry, and the elevation is about six thousand feet above the sea, sufficient to keep the respiratory functions in a state of activity. Aside from the months of July, August and September, which constitute the rainy season, it affords superior advantages for this class of patients. In a disease so impregnable to the effects of medication we must rely more on the influences of climate, which in this case fortunately often proves potent in retarding, if not arresting, the disease.

As to the use of medicine in granular degeneration of the kidneys, they will be found more potent in protecting the patient from the effects of complications than upon the disease *per se*. We must have regard to the fact that this lesion is for the most part led up to through an increased activity of the gland which has been long overtaxed, resulting at length through continued functional hyperæmia in proliferation of inter-tubular fibration. The gland may suffer in isolated sections, some of which may come to a stand-still, or other new points may develop and continue independently and thus, step by step, the whole gland gradually succumbs, not by a general process simultaneously through its whole corticle at once as in nephritis. The lessons to be learned from this are, that if we can modify the conditions which give rise to the morbid process, we have greater chances of checking its progress than would at first be expected. Advantage

may be taken of the temporary lull in the progress of the disease so common, to place the patient under conditions less likely to favor its subsequent progress.

Remembering how Bright's disease is largely resultant from indulgence in too highly nitrogenized food as a habit, the diet must be regulated to contain barely sufficient of such to maintain tissue repair. We have already laid down the rules which should govern such cases, and it is only necessary to add here that they must be still more rigidly adhered to in this lesion if the patient's life is to be preserved. The careful regulation of the diet, and also of the condition of the skin, constitute the two chief points on which depend aggravation of the existing lesion, and no less so the determination of serious complications. By keeping the skin warm and dry, and lessening the nitrogenous waste in the blood, we avoid with most certainty the acute conditions which sometimes arise; and be it remembered, that in these acute conditions is where the chief danger to life lies. All that we have said under the head of nephritis with reference to clothing, is quite as applicable here, and need not be again gone over.

By referring to a table of urine in my former paper on the pathology of Bright's disease, published in this journal for April of this year, it will be observed that the average quantity of urea excreted by the kidneys daily in renal fibrosis, is 160 to 280 grains; consequently, from 232 to 352 grains of urea more than the normal is retained daily in the circulation, either as urea or the products from which urea is formed. Now, herein lies one of the great dangers to be apprehended in granular degeneration. As a result of the above, uræmia often explodes suddenly; or, almost equally serious, the lighting up of some acute inflammation within the chest, which is even more intractible than uræmia itself. It will not do to await the onset of such complications as these. All rational treatment of renal fibrosis must have constantly in view the threatening of such dangers, and measures must be constantly employed from the first which are calculated to avert the mischief. We have referred to the necessity of diminishing the nitrogenous, and increasing the carbo-hydrate foods. Further measures will be the constant maintenance of the bowels in a regular condition. Occasional hot air baths are of

immense importance in securing free elimination through the skin, of waste products. The kidneys are, perhaps, on the whole, best kept active by means of alkali salts; but heart tonics, as digitalis, I believe are unsafe, and should be limited at least to special cases, where, for instance, there is no evidence of over-tension in the vascular system. The reason for this caution lies in the fact that a large proportion of the cases of renal fibrosis terminate in cerebral apoplexy. It is believed, with degeneration of the arterial vessels and hypertrophy of the left heart, so constant an accompaniment of this lesion, that the employment of heart stimulants constitute no ordinary danger, which should be restricted, not only as to drugs, but also in the avoidance of all muscular exertion which calls suddenly or heavily upon the heart's action.

Various drugs have been recommended as exercising a direct curative action on the kidney itself. Perhaps the most popular of these are iodide of potassium and the chloride of gold; but the records as yet are not sufficiently encouraging to inspire great confidence in their use. Iodide of potassium theoretically promises the best results, and some authors recommend it strongly. Bartels gives the drug to the extent of 20 to 30 grs. daily, continued for an indefinite period. He says in one of the cases treated for four months thus, "the albumen had as good as disappeared from the urine; the amonnt of urine fell from 2,000 c.c. on his entrance to the hospital, to 1,400 c.c. on an average." Too much reliance should not be placed upon such measures in the light of past experience. Bartels himself adds: "The patients whom I treated upon this principle, before threatening symptoms appeared, withdrew themselves from my observation too early, so that I cannot yet venture to form an estimate of th ultimate results of this method of treatment." As to chloride of gold, I am unable to say that it has any influence in checking the disease; but its use should be extended over greater length of time than I have had opportunities of observing its actions, but aside from its tonic action on the stomach, uniformly improving the appetite as it does, I should not be inclined to have much faith in its powers over the disease.

Speaking generally of the management of this disease, sometimes during the history, evidences of high blood pressure

are apt to be present—as dizziness, palpitation of a powerful nature, heaving the chest-wall visibly over larger space than usual, oppressson of the respiration, full, tense pulse, etc. Such symptoms should be met by rest, low diet, cardiac sedatives, and in extreme cases by venesection. In the latter stages of the disease we are likely to meet with somewhat opposite conditions of debility and anæmia; and these should be met by tonic suppurative measures, both general and special, and even with stimulants. Iron may be given as in the chronic stages of nephritis to counteract advancing anæmia. If the heart's action weakens, as it sometimes does in this stage, we know that it must be maintained, else the remaining portion of the gland will fall functionally below the conditions compatible with maintenance of life. Good Burgundy, or other red wine, should be allowed, as well as a more stimulating diet. It may even be advisable to administer digitalis in small doses here, and often with excellent results, as seen in the removal of dropsy. Sometimes complications threaten the patient from another source—as the lighting up of nephritis in addition to interstitial disease. Some increase of temperature, diminished urine, containing epithelial casts, higher specific gravity of same, and a larger amount of albumen mark the approach of nephritis. The measures advised before for nephritis are to be employed and pushed with corresponding activity, to the demands of the case.

Such are the general principles which we believe to be the safest guides in the management of granular degeneration of the kidneys. It is surprising, sometimes, to see the apparent health with which some patients progress for years, if carefully guarded against complications, even after very threatening symptoms have made their appearance. I append from my notes case 32, first seen September 3, 1882. Patient is 64 years of age; gouty history; had several attacks of vertigo within the past year; fell to the ground several times as a result thereof. Urine, 50 ounces daily, sp. gr. 1010; contains 10 p.c. albumen, and a few pale casts. There is slight œdema of feet; great itching of the skin, with erythematous rash. Headache and drowsiness are prominent. Radial pulse very tense and full; the carotids pulsate visibly. Complains of fullness in the head. The heart's impulse

strong, with extended area of dullness. Patient is weak, restless, and odor of urine is perceptible in the breath. He has been too much prostrated to be able to walk for weeks past. October 20, 1883, over a year after patient came undor my care, condition is as follows: Patient has gained in flesh during past year something over twenty pounds; is able to walk about, appetite is good, sleeps well at night, is clear in intellect and lively in spirits. He suffers no pain. In short, he enjoys life equal to the average, in every respect, of men his age. The urine is about normal in quantity, contains about 6 p.c. of albumen and a few pale casts. It is with difficulty I can make the patient realize that he is an invalid; yet it is plain that over a year ago he was on the brink of uremia and apoplexy, the latter of which caused the death of two of his family.

In closing the consideration of renal fibrosis, we wish to emphasize the fact, that success in its management will depend largely on its early discovery. Creeping on stealthily, as it always does, it will elude observation, unless the utmost watchfulness is exercised. No dropsy or abnormal condition of the urine is likely to attract our attention, or that of the patient, to the nature of the disease. The constitutional or special physical peculiarities of the patient himself must often be the sole guide to investigation. An unusually full pulse, with other evidences of vascular tension, should be noted. A gouty habit must not pass unobserved. Method of life should be noted, particularly as to indulgence in the pleasures of the table. By habitually noticing such points as these in our patients, we get to know what class of cases we are most likely to find fibrosis developed from; and thus, by anticipating the approach of disease, we make its discovery more frequent in the early stages, the advantages of which cannot be overestimated.

AMYLOID DISEASE.

In the special management of this lesion, we should have in view the fact, that it essentially differs from the preceding forms of disease in its nature, and requires an entirely different method of treatment. In nephritis and fibrosis, many of the principles underlying the treatment are very similar, and the management corresponds accordingly, often varying only, in the main, with the

activity with which the measures should be employed. Both of the preceding diseases begin in the kidney itself, and though pursuing a different course, owing to the processes attacking different tissues of the same gland, yet the force of both is ultimately made known through serious interference with the function of the gland, and measures must be largely directed in both to the restoration of that loss of function. But in amyloid disease the case is quite different. In the first place, the amyloid kidney constitutes only a part of the chain of morbid processes whose origin and cause are quite outside of the kidneys themselves, and our measures will be more largely directed to these outside influences which give rise to the disease, than the measures directed to the lesion in the renal structures themselves. In the second place, the function of the kidneys is far less interfered with here, than in the lesions already considered; and we seldom have to contend against the dangers of uræmia, or like complitions. The patient is permitted to live the natural duration of the disease, unless, in the advanced stages, he succumbs to diarrhœa or dropsy. In the third place, the disease carries with it from the beginning the stamp of debility and cachexia, and calls for active supportive measures, in all cases and in all stages. It is fortunate that the amyloid kidney performs fairly its function till very late in the disease, as it permits us to carry out more fully this last indication. Urea is eliminated, little short of normal in amount, throughout the greater course of the disease, and, as a consequence, uræmia need seldom be feared, save near the close of its course. We are thus enabled to resort to stronger meat diet in this, than in the other lesions, and the indications command us to do so with liberality.

From what has been said, it will be gleaned that preventive measures form a most important element in the management of amyloid disease. Syphilis, tuberculosis, chronic suppuration, in themselves largely under the influence of remedies, command our first attention, as the most certain method of arresting the resultant disease.

It is scarcely in keeping with facts to rank this disease in the list of incurable maladies, and deprive the patient of hope, as has been the habit with some. Amyloid disease is at least as

curable as the causes which gave birth to it, and as these are removed, the progress of amyloid degeneration will usually cease; and not only so, but the lesions caused thereby themselves are capable of being removed. He would be rash indeed, in the presence of past experience and present facts, who would affirm that phthisis, chronic abscess, necrosis, dysentery, and above all, syphilis, are incurable; yet these are the most prolific causes of lardaceous kidneys, and the progress of the latter will depend on the control of the former.

Generally considered, all these patients require tonics, nourishing diet, and all measures within our resources which will improve the constitutional debility. The condition of the blood calls for the use of iron, which must be continued over an extended length of time. The neutral preparations of iron are better borne, owing to the constant weakness of the stomach in those cases. Blancard's pill is also a peculiarly appropriate form, consisting of iodide of iron, well preserved through the peculiar mode by which it is prepared. Food should be the most nourishing possible, but the most easily assimilable at the same time, should be selected, in order not to precipitate diarrhœa, so frequently the accompaniment of this disease. Red wine and diluted spirits are often great aids to nutrition, and besides, tend to stay the general tissue waste, so marked a character of this malady. Tubercolosis, perhaps the most fruitful source, requires to be treated in accordance with the principles most successful according to recorded experience. It is to be hoped that the recent important discoveries in the pathology of tubercular disease by Koch, may lead not only to more successful treatment of the same, but also, as has been suspected already by some, to the possibility of an important rôle which bacteria may play in the disease under consideration. In the management of the various suppurative processes which give rise to amyloid disease, the question becomes one largely for surgical measures. It is a fact upon record, that in those hospitals where Listerism has been most thoroughly carried out, the number of amyloid cases have very strikingly diminished. This lends strength to the rule that where suppuration exists in chronic form, more especially in bone, it must, if possible, be controlled, even at the expense of sacri-

ficing a limb. A patient can never be considered safe if a necrosis continues, though perhaps not in itself producing much drain on the general health. The urine should be examined frequently in such cases, and on the appearance of albumen operative measures must at once be employed, if practicable. I treated a case of amyloid disease of the kidneys, with which some of you are familiar, resulting from necrosis of the right humerus, which illustrates the length of time suppuration may continue without apparent damage, and considered harmless, perhaps, by the patient, till some other disturbing cause of health precipitates the amyloid degeneration. In the case referred to, the necrosis continued for twenty-two years before any kidney lesion was developed. Sometimes we meet with the amyloid disease, resulting from suppuration, where an operation may be inadvisable, the patient's general condition not warranting such risk. In all such cases it is wise to resort to the minutiæ of Listerism, for the reason that it practically isolates the destructive action from the atmosphere. As a rule, so long as suppuration is limited within a walled cavity it does not give rise to amyloid disease, but when a communication becomes established with the surface, and atmosphere gains access, the mischief ensues to the kidneys.

By antiseptic dressings we may sometimes practically silence the provocative of the disease, and in the meantime by tonic measures improved the general condition of the patient to a point where an operation would become admissible and thus possibly save the life of the patient, where otherwise he must necessarily have succumbed. When the disease is traceable to syphilis, specific medication will often be followed by most satisfactory results. With the minutiæ of this it does not fall within our province here to particularize, especially as the treatment of syphilis is of late clearly defined in excellent special works. Although amyloid disease is usually the sequence of the tertiary forms of syphilis, and iodide of potassium may be used with great confidence in relieving the symptoms, we may say that the prevailing opinion is in favor of the use of minute doses of mercury long continued, after the method of Dr. Keyes, of New York, not to the exclusion of iodides, perhaps, but in combination therewith. The iodide of potassium is recommended by Bartels in

all cases of amyloid disease which seems to be the only medicine he employs with the view of attacking the disease itself. It is doubtful, however, if its use is attended by any striking benefits, unless in those cases which arise from syphilis. Not so, however, the combinations of iodine, as with iron, for instance, which is a most desirable form of tonic alterative. Dickinson speaks of the use of alkalies, especially in cases attended by purulent loss. His object seems to be with the view of making good the loss of alkalies, always so great in suppuration; and theoretically also because amyloid matter is so soluble in alkalies. He afterwards admits, however, that "disease cannot be treated in a test tube," and goes on to explain that the alkalies are well borne, and in connection with other tonics give better results than tonics alone, but that on the whole "their use is disappointing." Sooner or later we shall be called upon to contend with the most obstinate and serious of the complications attending this disease, which directly or indirectly is the most frequent cause of death namely—diarrhœa. For the successful management of this complication it is well to bear in mind the pathological cause, and this is due to the degeneration of the small intestinal arteries, the epithelium of the mucous membrane and the muscular coat of the villi. The number of remedies recommended for this obstinate affection is quite formidable, and covers nearly the whole vocabulary employed for the relief of intestinal fluxes. The preference should be given to sulphate of copper in one-eighth to one-fourth grain doees combined with some opiate as the compound soap pill B. P. But if the stomach does not bear the opiate well it is better to to give it by the rectum preferably in the form of deoderated tincture. The accompanying dyspepsia is to be managed as in similar conditions elsewhere found.

Dropsy seldom complicates the case till the latter stages are reached, and then it is less within the range of relief than in other forms of kidney lesions. We may relieve it by means of hot air baths, but it soon returns owing to the impoverished condition of the blood, and extreme damage to the glands, as well as the degeneration of the small vessels. We must use the hot air bath more cautiously here, owing to the greater exhaustion of the patient. Stimulants and tonics containing iron are apt to give

more permanent relief to dropsy here than the evacuant treatment. Diuretics as a rule are not called for, as the urine is largely above the normal in quantity. Visceral complications are apt to make their appearance as enlargement of the spleen and liver, which sometimes becomes enormous. The nature of the disease is the same here as in the kidneys, in fact, a part of the same process of degeneration of blood vessels and deposit of the peculiar amyloid material. If special measures become necessary for relief of visceral enlargement, perhaps the best agents are iodides, stychnia and hydrochlorate of ammonia. Uræmia, as before intimated, seldom appears, save in the very last stages, and then tonic convulsions are the exception; slowly approaching stupor followed by coma closes the scene. Throughout the course of amyloid disease we should bear in mind that, as in fibrosis, we may have nephritis engrafted upon the case at any period of its history. The early invasion of such complication it is of importance to discover and apply the appropriate treatment therefor. We shall not be able to push the evacuant treatment here so energetically or so contiuously as in simple nephritis, as the patient's general condition will not admit of lowering measures; hence the most careful adjustment of remedies must be sought in order to reduce the force of the more active disease, and at the same time not to aggravate the progress of the more chronic lesion.

The completion of this paper fulfills a promise made a year since, to present in a series of articles the whole subject of organic renal diseases; their pathology, diagnosis and treatment. In a field so prolific and varied as to its literature, the question which we have had to solve has not been what we should say, but rather what we should not say. Few subjects in medicine are so replete in literature, and at the same time on which opinions have been so unsettled, in nature, pathogenesis and therapeutics as this question of Bright's disease. Few diseases possess so extensive a list of remedies put forward with claims for its relief, which only tends strongly to the conviction that few of them are worthy of confidence. We conceive it to be of equal importance under such circumstances to eliminate those agents of doubtful utility as it is to indorse those which possess substantial merits. This paper is therefore burdened with the mention of few drugs and fewer

formulæ, as we believe a proper undrestanding of the therapeutical indications of the diseased processes will lead to the most judicious selection of remedies in each and all cases. The principles involved in the treatment rather than the details have been our study to present, for once these are comprehended thoroughly, matters of detail are more safely left to the judgment of the therapeutist than the unscientific and uncertain vaunting of specifics. To succeed in the management of albuminuria one must cast aside all preconceived notions of specific medicines; the action of any such can never cover this wide and diversified field of morbid changes. The management must be reduced to philosophical reasons, as in the treatment of an inflammation, varying as it must when found in one class of textures, and again in another, and while endeavoring to fathom the true principles which should guide our management in these cases, we have endeavored to avoid the vast field of hypothetical speculation which has made the literature of this subject so voluminous and so uncertain, and have studied to draw rather from the record of clinical facts, than from the realm of theory the materials which we conceived would conduce more to the acquirement of practical knowledge available at the bedside of the patient, for after all, as Froude well says, "The knowledge which a man can use is the only real knowledge. * * * The rest hangs like dust about the brain, or dries up like rain drops off the stones."

68 Madison Street.

ARTICLE II.

HUMAN PARASITES. By F. W. GODING, M.D., President of the Linnæan Science Club, Ancona, Ill.

INTRODUCTION.

A parasite is, according to Webster, "an animal which lives during the whole or a part of its existence on the body of some other animal."*

Van Beneden † defines it thus: "The parasite is he whose profession it is to live at the expense of his neighbor and whose

*From *parasitus*, to eat at the table of another.

†Animal parasites and messmates.

only employment consists in taking advantage of him, but prudently, so as not to endanger his life. He is a pauper who needs help, lest he should die on the public highway, but who practices the precept not to kill the fowl in order to get the eggs." Parasites belong to numerous different types ranging through the entire animal kingdom and the dissimilarity should be understood to get a correct idea of the subject.

Among mammals, birds, reptiles, and amphibians we do not find any exclusively parasitic types, but in each are some which to a certain extent are. Thus, the vampire bats live upon the blood of other mammals; the bald eagle depends to a considerable extent on the fish-hawk for food. There are a few fishes which are partly parasitic, e.g., some of the *Fieras feridæ* inhabit the intestines of holothurians and other echinoderms; the *stegophilus* lives in the mouth of another cat-fish.* Many of the invertebrates are parasites, *e. g.*, the *entoconcha* lives in the intestines of echinoderms; the *cochiolepis parasiticus* is found under the scales of a worm.

Among insects, the true coleopterous types, *meloidæ*, *pselaphidæ* and *staphylinidæ* are nearly all parasitic. Of the *arachnoids* we have the Linguatulidæ and Acaridæ† infesting the skin and air passages of man.

The Crustaceans present a number of types among which may be mentioned the *Pinnotheres*, *conchodytes*, etc. Of the true worms are the leeches. Of the rotifers the *Bellatro calvus* is found in certain worms.

Among scolices, we have animals which live almost altogether in other animals, as Cestodes, Trematodes, Nematodes, etc., which will be more fully described further on.

The Polyps which are parasitic are few in number; among others are *Epizoanthus americanus* attached to the hermit crab‡ and *Polythoa* which infests a peculiar form of sponge (*Hyalonema*) found off the coasts of China and southwestern Europe.

The parasitic species contributed by the Protozoans are worm-like forms, known as Gregarinæ, inhabiting the intestines of

*Platysloma.

†See chart.

‡*Eupagurus pubescens.*

vertebrates and invertebrates, especially abundant in the intestinal canal of beetles, cock-roaches, etc. Hence, it will be seen that parasites vary greatly in type, having nothing in common except the physiological character of depending upon others for sustenance.

Scarcely any portion of the human body is free from parasites; and each organ and system has its own special parasites.

Davaine* has accordingly divided them into four groups, viz.: (1) those which inhabit the cavities communicating with the exterior, *e. g.*, (*a*) the respiratory passages; (*b*) the digestive passages; (*c*) the biliary passages, and (*d*) the urinary passages. (2) Those which are contained in closed cavities, natural or accidental, as, (*a*) blood-vessels; (*b*) serous cavities. (3) Those which belong to some organic system, (*a*) the nervous system; (*b*) the muscles of animal life; (*c*) the lymphatic system, and (*d*) the inter-organic cellular tissue. (4) Those which affect complex organs, as (*a*) eye; (*b*) the genital organs. But to treat the subject scientifically it is better to study them with reference to their natural history.†

The study of parasites has received considerable attention from European writers, where their presence is much more common than here, but they have been sufficiently often met with here, and with a fatal result, that a more extended study of them is imperatively demanded.

How parasites were developed in the interior of the body was, until a comparatively recent period, a sealed book; but through the earnest investigations of Bremser, Le Clerc, C. Davaine, Cobbold, Diesing, Dujardin, and others, we are now able to study them with facility tracing them to the ovum, and conversely from the ovum to the mature animal. One peculiarity is that they rarely pass through more than one stage while in the interior of a certain animal, waiting for its next host to aid in its progress.

PART I.

ENTOZOA.—Parasites are divided into entozoa and ectozoa‡.

*Davaine, C. Traite des Entozoaires, etc., Paris, 1879.

†See the chart.

‡Epizoa of some writers.

The former are further subdivided into *arachnoides*, *platyhelminthes*, *Nematelminthes*, and *Infusoria*.

Arachnoides are the spider-like* parasites. The only order which is found within the body is Linguatulida, consisting of but one family, Pentastomidæ, belonging to which are two individuals, viz.:

P. denticulatum.—This is the larval form of the *P. tænoides*, in which state it, as a rule, exists in man, though one case has been reported where the perfect animal was dislodged from the nose†. This parasite is found quite frequently in human bodies, encysted in the liver. The adult, *P. tænoides*, has a lancet shaped body, flattened over the abdomen, smallest at the tail, and marked with 90 transverse rings. The cephalo-thoracic segments are continuous with the body, and on each are a pair of retractile claws. The head has an oval mouth, armed with a horny lip. Breathing pores are numerous in all parts of the body, excepting the cephalic segment.

The length of the adult male is about an inch, while the female measures three or four inches.

The genital aperture of the former is found at the front part of the abdomen, while in the female it is placed at the caudal extremity. This parasite is oviporous, and passes through a complete metamorphosis, the first stage being that of the embryo, with a boring apparatus; the second, a motionless pupa; the third, or larval, having numerous rows of spines and two pairs of double claws; the fourth, the perfect state. It is while in the third stage that it is called *P. denticulatum*, and is of most interest to us. (Length, $2\frac{1}{2}$ lines).

The germs are usually introduced into the human stomach with raw fruits and vegetables, on which they are thrown by the host from its nose when sneezing.

Hence, we should be watchful when fondling dogs, as they are most liable to the trouble. Also, all fruits and vegetables should be carefully cleansed before being eaten.

As the parasite gives rise to no functional derangement, it is unnecessary to treat of it clinically.

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* Mites, ticks, etc.

† Dr. Landon, of Eibing, *Berl. Klin., Wock.* No. 49, 1878.

P. constrictum.—The natural history of this parasite is as yet incomplete (so far as is known), the larval form only having been described. It is possible that the mature animal has been described under some other name. However harmless the *P. denticulatum* may be, this parasite is to be dreaded, as it has been known to cause peritonitis and pneumonitis, and death in at least two cases.

The length of *P. constrictum* is nearly three-quarters of an inch; width, one-tenth of an inch. The cephalo-thorax is provided with four foot claws, and the abdomen is made up of twenty-three rings.

They are found encysted in the liver and lungs, coiled up like a watch spring in small sacs throughout the whole organ.

"When cut into, worms were seen regularly encysted in its substance, appearing as yellow specks."

Treatment.—As it would be impossible to diagnosticate this parasite, the principle to follow would be to meet the indications as they arise.

PLATYHELMINTHES.*—This class is divided into two orders, viz.: CESTODES and TREMATODES. CESTODES† are ribbon-like animals, some barely visible, others 100 feet long, living while in the larval state in the tissues, and as mature parasites in the intestines. They are divided into bi-sexual segments growing from the neck, and are discharged from the bowels, living a sort of individual existence. They have neither mouth nor organs of digestion, the animal to which they are attached performing the digestive act for them, the food being absorbed through the integument.

The segments impregnate themselves, become detached, are passed from the intestine, and swelling up they burst, the ova being scattered by the winds and water over the grasses, etc. The grass is then carried to the stomach of some animal, the ovum hatched into an embryo, which pierces the walls of that organ, entering the blood vessels, and finally works its way into its appropriate tissue. It now becomes encysted, and forms the so-called "hydatid." If the tissue is eaten without being properly cooked, the cysts become developed into some form of tape-

* Broad worms.
† Cestura bands.

worm, being freed by the solvent power of the gastric juice.

The order of cestodes is divided into two families, viz., TÆNIDÆ, which have hooks and suckers on the head, and the genital organs located on the lateral edge of each segment.

BOTHRIOCEPHALIDÆ.—*T. solium** is of a tape-like form, composed of a series of bodies, each containing male and female sexual organs, and capable of self-impregnation. It resides in the intestine.

This parasite exists in two forms within the human body, viz., cystic,† in the tissue; and the sexually perfect worm, in the intestines.

It is from 15 to 25 feet long, ¼ to ½ inch wide, and white. The head is 1-50 of an inch thick, with about 26 hooks, arranged in two series radiating outward. The common genital orifice is located at the center of the lateral border of each articulation.

The eggs are spherical, and 1-750 of an inch in diameter.

As the articulations mature, they pass from the bowel, retaining their vitality for several days. They possess the power of locomotion in a slight degree, thus being enabled to attach themselves to the grass, etc., where they have fallen. Later, they are conveyed into the stomach of some animal, where the eggs are hatched, the embryo remaining free. They rapidly bore through the walls of the intestine, aided by three pairs of spicules with which they are provided, and find their way into the tissues of the body, there to become encysted. They increase in size, and are now in the next stage of development; the six spicules are discarded, the parasite acquires a neck and head, which is provided with four suckers, and a crown of hooks similar to those of the adult tapeworm. The head and neck are inverted upon themselves, and surrounded by a globular vesicle, the body. This is known as "*cysticercus cellulosæ*," ‡ or "hydatid," and when found in the hog, the meat is called "measly pork." The parasite may remain in this state for an unlimited period of time without change, unless it be a gradual atrophy of the cyst after several years.

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* Usually found alone.

† Cysticercus cellulosæ.

‡ From its situation.

The subsequent history deals with introduction of the *C. cellulosæ* into the human intestine, and its development into the adult tapeworm.

When a piece of pork containing cysticerci is conveyed into the human stomach in a partly cooked condition, the sac is digested by the gastric juice, liberating the parasite. It attaches itself by means of the hooks and suckers to the upper surface of the intestine, where the neck, slowly absorbing nutriment, increases in length until developed into the perfect tænia.

Symptoms.—A great variety of symptoms have been given supposed to be due to the presence of this parasite, but the only one of diagnostic value is the passage of fragments from the bowels. Healthy persons may be infested for years without inconvenience, while those of feeble constitution will suffer from abdominial pains, indigestion, intestinal hæmorrhage, restlessness and even convulsions.

Treatment.—The principles to be followed in the treatment of tænia is to first produce a toxic effect upon them as they will then loosen their hold upon the mucous membrane and cause their expulsion from the bowels. Among the multitude of remedies, the following have been found in many cases efficacious: Ol. terebinthinæ, filix mas (ethereal ext.), koosso, kameela, carbolic acid, pomgranate root bark and pumpkin seed tea. The above are all of value, and it may be necessary to try several before one will be found to dislodge the worm. The manner of using the remedy is of as much importance as its selection. A very good plan is to first move the bowels slightly; second, place the patient on a light diet; third, give a teaspoonful of the following prescription after each meal in a tablespoonful of water for three days; then if the worm is not dislodged, fourth, give a slight purge:

℞ Granati radicis cort. 90. c. c. or grs.....ℨiij
*Ext. filicis fluidum 15. " " .....ℨss
Syrup rhei 45. " " .....ℨjss
Mix. Sig., take as directed above.

* Ethereal extract

*Cysticercus cellulosæ.**—This is in very close relation with the above, and it is sometimes found in man. We will devote a few lines to it.

This parasite is found in the following localities: In the cellular tissue beneath the corium, between and in the muscles, on the surface and in the interior of the brain, in the envelopes and inner chambers of the eyeballs, in the heart, lungs, mesentery and lymphatic glands.

Symptoms.—The symptoms depend on the number of parasites and the importance of the organ or tissue infested. In the subcutaneous cellular tissue they are usually harmless, while in the eye one may seriously interfere with vision; and in the brain the local irritation may cause vertigo, paralysis, convulsions and death. One case is recorded† in which a young man twenty-two years of age, apparently in good health, fell dead in the street, the the fatal result being due to the presence of a cysticercus within the *pons varolii.* A correct diagnosis was impossible during life. When subcutaneously located they are sometimes felt as small round hard bodies.

Treatment.—The treatment is excision of the cyst where practicable, but it may be the plan recommended by Prof. Rand for treating "trichanosis," (q. v.) will be useful.

The parasites are undoubtedly introduced into the system by swallowing food containing the ova, as meats, and more frequently green tops of garden vegetables. Hence such articles of food should be well cleaned and properly cooked.

C. tenuicollis.—This is the larva of *tænia marginata* and evidence proving its presence as a parasite in the human body is slight, but Cobbold considers that two undoubted cases are known. What was stated about the above will be sufficient for this species. The mature worm is common in the dog.

Tænia acanthotrias.—This is identical in appearance with *T. solium*, and is considered by good authorities to be a mal-formed variety of that parasite, the only difference being three rows of hooks on its rostellum, while the *T. solium* has but two.

T. medio-canellata.— This cestode is derived from the *cys-*

† For an account of its development see Tolman.

‡ Cobbold "Parasites," p. 92.

ticercus bovis found in beef. It very closely resembles *T. solium* being, however, much larger and stouter. The head is club-shaped with four suckers and a depression in the center corresponding to the rostellum of its cousin; but the coronet of hooks is wanting.

This parasite varies from fifteen to twenty feet in length.

Symptoms.—See *T. solium.*

Treatment.—The expulsion of this parasite is much more easily accomplished than that of *T. solium* the same method being used.

Echinococcus hominis.—This parasite with its sac and contained liquid is commonly called "hydatid." It is a juvenile stage of *T. echinococcus* found in the dog and wolf, and it developed into that state upon gaining entrance into the alimentary canal of those animals. Each parasite consists of a body and head. Around the latter is found a row of sharp hook-like teeth. The body is solid and a number of ovoid bodies (ova) beneath the external coat gives it a speckled appearance. The length of the perfect cestode as found in the dog in from one-fourth to one inch.

The *E. hominis* is found in the liver, ovaries, lungs, kidneys, testicles, brain, muscles, bones§, uterus, spleen, heart, etc.

Hydatids are dangerous from pressure upon neighboring organs interfering with their action, or they ulcerate and rupture causing death from contact with the peritonæm and pleura. Occasionally they ulcerate and the *echinococcus* dying atrophies, terminating in a spontaneous cure.

Diagnosis.—The diagnosis is frequently difficult. If a tumor is found giving dullness on percussion, with perhaps the hydatid fremitus, and under the microscope the aspirated liquid shows hooks and other parts of the cyst, a diagnosis would be reasonably certain. The prognosis depends upon the situation, size and rapidity of growth of the tumor.

Treatment.—Besides a spontaneous cure referred to above, the cyst may rupture, discharging its contents into the bowels, stomach, lungs, ureters, etc., completing a cure. But the treatment proper may be either medical or surgical. Arranged under the

*The head of the tibia is a common resting place for them.

first head we find recommended the administration of bromide and chlorate of potassium, chloride of sodium, male fern, oil of turpentine, calomel, kameela, etc. As a rule this method of treatment has been a failure, while the surgical treatment, viz., excission wherever practicable, and in other cases aspirating the cyst causing the death of the parasite, followed by atrophy of it, is the most satisfactory. Electro-puncture has been employed by an Icelandic surgeon with a success warranting further trial. Prophylactic measures should be employed where and whenever the disease is prevailing, such as destroying the excreta of the dogs from which the ova is indirectly introduced into the alimentary canal of man.

T. nana.—As regards the dwarf tape worm, unless Spooner's case* be genuine, there is but one solitary instance on record of its occurrence in the human body; moreover we have no evidence of its having existed in any other host. It was discovered by Dr. Bilharz, of Cairo, at the post mortem examination of a boy who died from inflammation of the cerebral membrane. Prodigous numbers existed. The largest specimen measured only one inch in length. To the naked eye these worms resemble short threads, and consequently they might very readily be overlooked. The head is broad and furnished with a formidable rostellum armed with a crown of hooks. The hooks have large anterior root processes, which extending unusually forward impart to the individual hooks a bifid character.†

T. flavo maculata.—This cestode was first discharged from an infant nineteen months old. The length varies from eight to twelve inches; the joints being very broad, narrowed from above downwards; near the middle of each joint may be seen a number of yellow spots, representing the male organs of generation, the outlets occurring all along one side of the body.

T. lophosoma.—This cestode measures about eight feet in length; breadth one-fifth inch, and one-thirteenth of an inch thick. There is a ridge running the entire length of the parasite, hence, the proposed common name "ridged tape-worm." The

* American Journal Medical Science, 1873.

† Cobboid.

reproductive papillæ are very prominent. The eggs have a diameter of about one eight hundredth of an inch.

For symptoms and treatment of the last three parasites, see *T. solium*.

BOTHRIOCEPHALIDŒ.—This family is charcterized by having two narrow lateral furrows without hooks on the head. Three species have been found inhabiting the human body.

B. latus.—This cestode derives its name from the width and shape of its articulations, being considerably broader than long. It is found in the cavity of the small intestines. The color is blueish-white, sometimes brownish in the middle. Length, very great, amounting in some cases, to over 2,000 articulations. Width, about one inch. The head is oval, one twenty-fifth of an inch in diameter, and capable of assuming various forms. The male and female organs of generation are distinct, those of the former being farther in front. The mature eggs are oval, $\frac{1}{370}$ of an inch long, provided with a lid for the escape of the embryo. The outer membrane of the embryo is covered with ciliæ, while within is a vesicle provided with three pairs of spiculæ, like those of the *Tæniæ*. The mature articulations are discharged from the bowels in chains after having evacuated the ova.

The history of the development of *B. latus* has not been determined with any degree of certainty, but as far as investigations have been carried, they point to the different varieties of fishes as the breeding places for it.

B. cordatus.—This cestode infests only the residents of Greenland, and corresponding longitudes. It is usually about one foot long, closely resembling the above as to its anatomy, except the head which is heart-shaped, the apex directed forwards.

The symptoms and treatment do not differ materially from those caused by other tape-worms.

B. cristatus.—I can find but two cases reported of this parasite (*Davaine). He states that it is nine or ten feet long, and is characterized by two prominences, together forming a crest covered by papillæ. The segments are one-half an inch in breadth, the entire worm being narrower than *B. latus*.

*Traite, art. Les Cestodes. Bibl. No. 2, p. 580.

* TREMATODES.—An order of *Platyhelminthes* not articulated, and the integuments free from ciliæ in the embryo. They are provided with one or more suckers, by which they attach themselves to the animal unwillingly acting as their host. The alimentary canal is forked, without an anus; the vascular system is undeveloped, but there is an urinary apparatus, with an excretory tube. They are mostly hermaphrodite; but as there is no connection between the organs of generation, it requires the union of two individuals for impregnation.

Trematodes exist in two forms, viz.: encysted and free. Their mode of development is very interesting. The perfect worm deposits an egg, which hatches into a sac, formerly known as *Opalina*, itself an entozoa, and once believed to be an Infusoria. This gives birth by internal germination to one or more *cercariæ*, or oval tailed organisms, which swim actively in the water, and if possible, enter the bodies of fishes, etc., and, either directly or indirectly, into the stomach of man. Here they develope into *Trematode* worms or liver flukes. We find them devided into several families, but one being interesting to us, viz.: Distomidæ, members of which we will proceed to describe.

D. hepaticum.—This has been found under the skin in various parts of the body, but it is most frequently found in the gall ducts and sac, where as many as 30 or 40 have been found in one patient.

The sexually mature fluke measures $\frac{3}{4}$ of an inch in length, and is about $\frac{1}{2}$ an inch through its greatest diameter. The body is very flat, with the anterior end so constructed as to form the head and neck. The mouth is found at the root of the neck; the reproductive organs in the mesial line just below. These organs are marked by dark spots and lines showing the extent of the male and female organs. The surface of the body is covered with minute spines which have diminished in size toward the posterior extremity.

D. crassum.—This fluke is about two inches long, and $\frac{5}{8}$ of an inch broad. The alimentary canal in this species is not branched, but double; the body pointed in front and rounded behind. But few cases have been recorded.

* A hole.

D. lanceolatum.—Three cases of the occurrence of this parasite have been recorded.

This is the lance-shaped fluke, and measures $\frac{1}{3}$ of an inch in length, and $1\frac{1}{2}$ lines in width; both ends are pointed, but the posterior is more obtusely so. The surface is smooth, without spines.

These are found in the biliary passages, usually existing without causing any untoward symptoms; but they occasionally are the cause of grave disorders, as the "dysentery of the Nile," etc.

The patient will have the symptoms of intestinal irritation; foul tongue; surface cold; pulse accelerated; indigestion; nausea; headache and diarrhœa; occasionally vomiting, and passing per ani blood persistently. The treatment would depend upon the symptoms; but expulsion of the parasite should be secured. Ordinary vermifuges are, as a rule, inefficient, remedies that will profoundly affect the system being indicated.

Great care should be exercised when eating oysters, clams, fish, etc., to see that the flesh is well cooked, as it is through them that the parasite is introduced into the body.

D. hæmatobium is found in the abdominal venous system, especially in the vena porta, and may occasion serious nervous and other disorders. It occurs in $33\frac{1}{3}$ per cent. of the population of Egypt. The males and females are distinct, the male being $\frac{1}{2}$ an inch long, and cylindrical; the female being filiform, and $\frac{4}{5}$ of an inch long. The surface of both sexes is smooth.

D. heterophys.—This minute parasite is $\frac{3}{4}$ lines in length, and was first found in the intestines. It is pear-shaped, the small end being anterior, while the entire surface is covered with spines. The ventral surface is provided with a peculiar disk, supposed to aid as a "hold fast" during the sexual act.

Tetrastoma renale is five lines long; found in the urine.

Polystoma pinguicola is eight lines in length; was found in a tumor connected with the ovary.

P. venarum is three lines in length; it has been found in venous blood and sputa of patients troubled with hæmoptysis. This species is doubtful, and is supposed by some to be the young of *D. lanceolatum.*

D. ophthalmobium is about 1-24 inch. in length, and of an oval

shape. It was found in the eye of a child suffering from congenital cataract; frequently called "the eye worm." This species will probably prove to be the young of some of the above parasites.

The treatment is simply palliative when dealing with the parasites noticed above.

NEMATELMINTHES.—The *Nematelminthes* next claim our attention. They have cylindrical bodies, and are distinctly unisexual; there are no organs of special sense, but the alimentary canal is perfect throughout. But one order has been found in man, viz.:

* NEMATODES.—In these parasites the body tapers toward each end, and has a distinct muscular system; the mouth is at one extremity; the anus at, or near, the other; the alimentary canal consists of a thick-walled pharynx and the intestine, a simple tube representing the stomach and œsophagus; the nervous system consists of a ring of fibers and nerve cells around the pharynx; the sexual organs, as a rule, are distinct, those of the male being near the posterior extremity, while those of the female are near the center of the body. The spermatozoa are cell-like and amœboid.

About a dozen species are known to inhabit man, and may conveniently be arranged into four families, viz., ASCARIDÆ, STRONGLYLIDÆ, TRICOCEPHALIDÆ, and FILARIDÆ.

The ASCARIDÆ have two representatives.

A lumbricoides, inhabiting the intestine. The body is round, with a smooth surface, yellowish in color, tapering toward the head. The head commences abruptly by three tubercles which surround the mouth; the body is marked with transverse lines, and with four lines from the head to the tail. The males are about six inches in length, while the females are a foot, and even eighteen inches. The natural history of this species is as yet not fully known.

Symptoms.—The discharge of the worms is the most important and only reliable symptom. Many others are mentioned by writers, as itching of the nose, convulsions, grinding the teeth

* Threadlike.

while asleep, etc.—symptoms showing intestinal irritation. Sometimes the worms are vomited. A child living here was troubled with this parasite recently, and getting frightened at the appearance of the stranger after handling it, rubbed his eyes while crying, whereupon the lids became enormously swollen, completely closing them. Tr. of lobelia will reduce the irritation and swelling in a short time if applied to the parts.

Treatment.—The indications are, first to expel the worms present, and second to prevent their re-accumulation. The most efficient means of fulfilling the first is the administration of santonin, spigelia and senna, tansy, or wormwood.

They usually find their way into the system in the drinking water, hence avoid shallow wells, pools and creeks for water supply.

A. alata.—This is comparatively unimportant to the physician, being rarely found in the human subject. It is found in the domestic cat frequently.

For symptoms and treatment, see *A. lumbricoides.*

A (Oxyuris) *vermicularis.*—This is by far the most freqent of all the parasites infesting the human body. They are most frequently found in children. I have seen several cases occurring in the adult; one young lady aged 18, was troubled to the extent of preventing her from aiding in the housework owing to the intolerable itching and nervousness. The seat, or pin-worm, is of a fusiform shape, the male being about one-sixth, and the female one-third to one-half an inch in length. The female pos sesses a long, slender tail, terminating in three points, which are to aid the parasite in attaching herself to the intestine. The surface is white and transversely lined. They inhabit the rectum usually, but occasionally find their way into the urethra and vagina.

Symptoms.—This parasite usually causes an intense itching pain in the rectum, tenesmus, excitation of the genitals, etc. The pruritis ani is caused by an herpetic eruption there which, when present, should always excite suspicion. The irritation may occasion loss of sleep. and thus impair the general health. They are sometimes voided in large masses, agglutinated together with mucous.

Treatment.—The same anthelmintics used for *A. lumbricoides* may be used here; injection of salt and water once or twice daily are good; also of vinegar, camphor, etc. Santonin suppositories are usually effective, and are considered the best remedy by many.

In all cases where worms are known to exist in the bowels, attention should be paid to the general condition of the digestive organs.

STRONGYLIDÆ.—The family characteristics are: the body is round and sometimes very much elongated; the mouth is round, oval or triaugular, and located at the extreme end of the body; the tail of the male is furnished with a bursa emitting two spiculæ.

S. gigas—Is the largest nematode parasite known to infest man, the male measuring from ten inches to a foot in length and one-fourth inch. wide, while the female is over three feet in length, its transverse diameter being one-half inch. The body is of a reddish color, the head obtuse and furnished with a simple oval aperture surrounded by six chitinous nodules.

The mode of reproduction is viviparious. This worm is found in the kidneys, bladder, abdominal cavity and omentum in man, and in the liver and lungs in some of the lower animals. When found in the kidney the substance of that organ is disorganized and its place occupied with a sanguino-purulent liquid in a short time. It is rare in man.

S. quadridentatus (Dub.): Is found in the small intestines, and causes a form of anæmia by piercing the walls of the intestine producing hæmorrhage, and at the same time abstracting large quantities of blood for their own subsistance. It is frequently found in Europe, Africa and South America (Brazil), but rarely in North America.

This emotode is from three-eighths to one-half an inch long. The head is pointed and bent so that the mouth is toward the vertex. The body terminates in a sharply pointed tail in the female, and a blunt point in the male.

Symptons.—Resembling ordinary anæmia.

Treatment.—Turpentine is said to rid the person of this parasite by killing it.

S. bronchialis.—This was found in the bronchial glands of an emaciated subject. It is of the ordinary shape, of a yellowish color, the male being one-half, while the female about one inch in length, about one-fortieth inch broad. The bursa is nearly bell-shaped in this species.

TRICHOCEPALIDAE.—But two species of this family have been found in the human body, and one of them is one most dangerous of all parasites.

T. dispar, so called from the hair-like appearance of the cephalic extremity. It is nearly two inches in length, the capillary portion forming about two-thirds of its length. It has been found in the cæcum, colon, and rarely in the small intestine. It is propagated by means of ova, which may be found in the dejection with the aid of the microscope, a fact which might be utilized.

The *T. dispar* is found in bodies of persons who have died from various diseases, viz., typhoid fever (A. Flint), in one case enormous quantities being found in the cæcum, the patient having died from symptoms of meningitis. No lesions of that disease were found after death. J. L. Smith says he knows of no symptoms caused by its presence, and requires no treatment, although any of the parasiticides may be used, followed with a cathartic.

Trichina spiralis.—As stated above, this is one of the most dangerous parasites infesting the human body. Also found in the muscular tissue of the hog, rat, etc. As commonly found, it is in a quiescent, encysted state, occupying the voluntary muscular system. The cyst is oval, about one-tenth of an inch long, and when recent, quite colorless; but after a time they become partly opaque, from a deposit of calcareous matter. Then they may be seen as minute, whitish specks scattered throughout the infected part.

This worm lies in the cavity of the cyst coiled upon itself hence its name. When stretched out it is cylindrical, $\frac{1}{28}$ of an inch in length and $\frac{1}{650}$ of an inch in diameter at its posterior extremity which is blunt and rounded, while the anterior is tapering and slender. The mouth and anus are located at either extremity, the alimentary canal extending in a direct line from

one to the other. The sexes are separate, but the organs of generation are incompletely developed. The worm may be seen to be more sluggishly. In this imperfect and practically sexless condition the parasite may continue for an indefinite period of time retaining its vitality, but undergoing no perceptible change. When, however, a piece of flesh containing the cyst is eaten by man in a partially cooked condition, the flesh with the cyst wall is digested and the worms set free in the cavity of the intestine. They increase in size in two days, being developed into the perfect trichinæ. Fecundation now takes place by a union of the sexes, and in seven days from the introduction of the food the female discharges living embryos from the vulva in immense numbers (500 to 600), and as the generative act continues for seven to ten days, they probably give birth to at least one or two thousand living young. The embryos are now about $\frac{1}{200}$ of an inch long, resembling the mature parasite. They immediately penetrate the walls of the intestines and disperse over the body, being found in the intestinal walls, mesentery, diaphragm, peritonæum and pleura and in all of the *voluntary muscles, the passage being made very rapidly having been found on the eighth day after eating infested meat. They are quite free when first found in the muscular tissue, but soon become encysted and then grow to the proper size, there to remain quiescent until taken into the stomach of another animal when they pass through the same metamorphosis as did their parents.

This process of development of the adult trichinæ in the intestines and the dispersion of the young produces a very dangerous and sometimes fatal illness in the person called trichinosis. Its earliest symptoms are those of intestinal irritation, viz., abdominal pains, nausea, vomiting and diarrhœa, accompanied by anorexia and fever, followed by ædematous swellings of the face, body and limbs, with muscular pains and tenderness, especially on motion; the patient lies helpless with the extremities in a semiflexed position, any movement causing intense suffering. There is also difficulty of mastication and deglutition caused by the invasion of the corresponding muscles by trichinæ; hoarse-

*A case was reported for the Chicago *Tribune* during the winter of 1881-2, in which the *heart* was penetrated by trichinæ. Drs. N. S. Davis and R. L. Rea were in attendance.

ness and loss of voice by their presence in the larynx, and if in the diaphragm and intercostal muscles greatly impede respiration. In one case reported it was estimated that there were 30,000 to the cubic inch in the gastrocnemius, 70,000 in the biceps, and in the deltoid over 90,000. "The severity of the disease depends on the quantity of trichinous food ingested, and the number of living parasites it contained." In severe cases death may ensue within two days from the intensity of the diarrhœa and fever, but usually in does not occur until the fourth or fifth week. If the patient lives after that period, he stands a fair chance of recovering, gradually returning to comparative health, but suffering from some stiffness of the muscles. The trichinæ are then encysted and remain so. It is doubtful if they are ever absorbed, having been found in the flesh of a man eighteen years after the attack of the disease.

Treatment.—The indications for treatment are, first, to drive the parasite from the alimentary canal (per ani), and second, if possible, destroy it. Cathartics have been given to fulfill the first indication, while benzine has been employed to kill the parasite, with some success. Carbolic acid has been recommended. The fever and pain are to be controlled by appropriate treatment. These remedies are to be used while the trichiniæ are yet in the intestines. Lately Prof. B. Howard Rand has proposed a mode of treatment to be tried after they have entered the tissues. He proposed to kill them by mercurial salivation, getting the patient completely under the influence of mercury, which being a parasiticide he thinks will destroy the trichinæ. If mercurials are for any reason contra-indicated, he recommends sulphur to be used in the same manner. Prevention is the true way of meeting the difficulty, and as the parasite is introduced into man by means of pork, all should see that that kind of meat is heated at least above 160° F., as that is sufficiently hot to destroy the cyst.

FILARIDÆ.—This family consists of several members having hair-like forms, and nearly all are parasitic.

F. medinensis.—This parasite is from 6 inches to 4 feet in length and one-ninth of an inch in a diameter. It prevails in Africa, India, and Arabia in Asia, and the United States.* The body

* This parasite occurred in the person of a relative residing in Massachusetts.

is cylindrical ending in a tail. The head is convexly flat with the mouth in the center, and that organ surrounded by four papillæ. They are viviparous. The male is unknown. The larvæ pass a portion of their existence within the bodies of some crustaceans. They then, in some manner, as yet unknown, pass into the human body probably by means of the drinking water and reach maturity. The female gets beneath the skin of a human being developing with its contained young into a whip-like cord just beneath the integument. To reach maturity requires a variable length of time, probably less than one year. It then approaches the surface causing a small ulcer through which it discharges the young after which it may be drawn out. The parasite usually causes no inconvenience; but occasionally it causes severe pain and even death. The Egyptians pour cold water on the skin over the parasite sometimes causing it to crawl out.

Tr. assafœtida in 30 drop doses three times each day will poison the worm.

Preventive.—Persons living in infected regions should filter the drinking water.

F. popillosa (*F. oculi*, of veterinary writers) is commonly found in the eyeball, also in the tissues, thorax, abdomen, membranes of the brain, muscles and cellular tissue. The males and females are three and seven inches respectively. The head is broad with a wide hard mouth armed with two denticles; two other denticles will be found on the sides of the neck and sixteen on the tail—eight on a side.

The worm migrates into different tissues, the track, of a yellowish color being readily seen by the naked eye. The natural history is as yet unknown. When occurring in the eye of the horse they are frequently extracted by veterinary surgeons.

F. lentis measures from one-fifteenth to three-fourths of an inch long, found in the crystaline lens. Probably this is the sexually immature *F. lacrymalis* of Gurlt.

F. trachelis measures about one-fiftieth inch long; it was found in the trachea and larynx of a person dying from some disease of the lower extremities.

F. bronchiaeis is from one-half to one and one-half inches in

length, and found in the bronchial glands. The tail of the male has a bursa bilobed and and bell-shaped. The tail of the female is pointed. They are of a pale yellow color and viviparous.

F. sanguinis hominis, Lewis, is the immature, *F. bancrofti* Cobbold. The mature female is about the size of a hair and three inches in length. The mouth is circular and destitute of papillæ. The neck is narrower than the body with the reproduction outlet near the head; the tail is blunt, the anus near the tip. The immature form as existing in the blood, is $\frac{1}{75}$ inch long. The parasite always exists in the vascular system rarely causing much inconvenience; but in the African race they occasionally cause grave disorders, such as chyluria and elephantiasis, and derangements of the nervous system. They have been found in abscesses of the lymphatic glands. They seem to be conveyed into the human blood by means of the musquito, having been found in the stomach of that insect.

INFUSORIA.—Is the highest division of Protozoa; they possess a mouth, a rudimentary digestive cavity and vibratil ciliæ. They are extremely minute and have the power of swimming about freely; but some species are fixed in the adult state.

Paramecium coli has frequently been seen in the dejections of fever patients, and those suffering from Cochin-China diarrhœa.

Cercomonas urinarius, has been found in the bladder and urine of a patient by Hassel.

C. soltans was found in the ovaries by Ehrenburg.

C. hominis, found in the colon and evacuations of cholera patients.

Tricomonas vaginalis, found in vaginal mucous.

PART II.

ECTOZOA.—These are animals which live upon the body of other animals, in some cases within the integument. They are usually articulates, and belong to a very low order of INSECTA and *arachnoida*. It has been a question and but recently satisfactorily answered, if these creatures were the cause of certain diseases, or the diseased condition the proper soil for their progagation. We are indebted to Schiodte, of Denmark, for the settlement of this.

The DIPTERA is the only order of insects represented among human ectozoa. It is represented by the family PEDICULIDÆ, consisting of three species.

P. capitis, or common head louse, is a small wingless animal, with a small thorax and large abdomen. The head is provided with hooks and beak to draw the blood from its victim, after attaching itelf by means of the beak. There it revels in human gore, to the intense misery of its unfortunate host. The eggs are oval, and attached to the hairs.

Treatment.—First enforce cleanliness; then an ointment prepared from sulphur, mercury, seeds of sabidilla and stavesacre, root of pyrethrum; also, any of the essential oils and alcohol may be applied over the parts infested. The eggs or "nits" may be removed by frequent washings with alcohol or vinegar.

P. vestimenti, the body louse, closely resembles the *P. capitis*. The eggs are round, yellowish white, and are always found in the folds and seams of the infested clothing—the home of the parents.

Treatment.—The proper way to destroy both insects and eggs is to place the clothing in the oven, and subject them to a considerable baking; then enforce cleanliness.

P. pubis, or crab louse, is found where the coarse hair grows, viz., the pubis, legs, chest, axillæ, beard, eyebrows, etc., but never enters the hair. Each variety has its own place of habitation, live there and there only, never trespassing upon the soil of its neighbors.

Treatment.—See *P. capitis*.

Œstrus humanis is a bot fly, which deposits its eggs in the skin of man, probably in the sweat tubes, where they hatch into larvæ or "grubs." They form boils, or even ulcers.

Treatment.—The opening in which the *œstrus* introduced the eggs should be enlarged, and the grub pressed out.

(I have met with one case, occurring in the person of my grandmother.)

PULICIDÆ is the flea family. It is represented by two species.

P. irritans, or common flea, is occasionally seen on the human

body. The bite is very irritating, however usually causing no serious symptoms.

Treatment.—Cleanliness and insecticides.

P. penetrans, or chigœ, is smaller than the *P. irritans*, with a proboscis as long as the body. The female only penetrates the skin, where she swells into a white globular vesicle about the size of a pea within a few days, causing intense pain.

Prognosis and treatment.—The parasite should be withdrawn with a needle, the entrance being easily seen, marked by a little red spot. When neglected, or carelessly ruptured, the young are scattered in the wound, where they mine passages, causing very serious gangrenous ulcers and sometimes death. Amputation would then be indicated.

ARACHNIDA.—Is represented by the order ACARINA, containing the mites. One family of this order will be treated of, viz., ACARIDA, which is divided into several sub-families, two of which are interesting to us—*Hypoderinæ* or subcutaneous mites, and *Sarcoptinæ*, or itch mites.

Arachnida are distinguished by the following characteristics: Head and thorax amalgamated into one piece; no true antennæ; four pairs of legs; breathing various. Contains spiders, ticks, scorpions, etc.

A. folliculorum, or pimple mite. These are harmless parasites, found in the ducts of sweat glands, especially those about the nose. Length, 1-100 inch. It has been asserted that no one is free from them. When present in large numbers they may excite irritation of the skin, producing an acne-like eruption. I have in my possession two specimens of this parasite, taken from the skin of a dog*. In this case there was an extensive eruption wherever the pimple mite existed.

Treatment.—If any is necessary, any of the parasiticides mentioned for *P. capitis* may be applied.

A. scabies, or itch mite, the cause of itch. It is a minute whitish insect, from 1-100 to 1-50 inch long, the male being least often found. The female is usually found at the end of the burrows they mine where she deposits her eggs. She makes her

* By Prof. Lester Curtis.

way beneath the epidermis by means of suckers or disks upon the legs, and bristles on the back directed backward. Hahneman thought the itch was the primary cause of all diseases. Years ago there were several varieties of itch, viz., "Jackson's itch," "Seven year itch," "Army itch," etc., but they are now known to be caused by the presence of the same insect, *A. scabei*. When burrowing in the skin the mite causes intense itching, and sometimes a vesicular eruption. If the disease progresses beyond this stage, it is due to the scratching done by the patient. As the mite requires a soft tissue to work in, they are usually found between the fingers.

Treatment.—The disease will remain until the parasite is destroyed. Cause the death of the mite, and then reduce the inflammation. First cleanse the parts thoroughly, and soften with soap and hot water; then apply common sulphur ointment, carbolic acid, kerosene, etc. Treat the vesication and inflammation with cosmoline carbolized.

ARTICLE III.

PRE-NATAL INFLUENCES AS AFFECTING THE TEETH.

By GEO. H. CUSHING, D.D.S., Professor of Operative Dentistry in the Chicago Dental Infirmary.

In considering the pre-natal conditions that may influence the character of the teeth, we must start with the proposition that perfect and healthy children can only spring from perfect and healthy parents.

While this implies that just so far as the parents diverge from the conditions of physical perfection and health, just so far will the offspring be physically imperfect and unhealthy, yet it will hereafter be seen that this proposition must to some extent be qualified.

Considering man simply in the nature of an animal, it would seem not unreasonable to suppose that if he were living in a purely natural state he would be almost or quite free from defective teeth.

So far as we know, the wild animals are, as a rule, exempt

from diseases of the teeth, and they reproduce their kind with close approach to perfection of type; and, were the animal *man* under like natural conditions, the same results ought to be predicted of him.

But whether the conclusions naturally to be drawn from the last proposition, viz., that decay of the teeth is a disease due to civilization, be accepted or not, it probably will not be denied that man is living, in a certain sense, in an unnatural condition, and that the state which we term civilization tends more and more to force him into artificial conditions of life, farther and farther removed from the simple methods intended by nature for his existence, and that this must tend in a greater or less degree to modify his physical status.

So we are forced to consider this question from the standpoint of the present status of man with reference to his perfection or otherwise as an animal, and his healthy and unhealthy condition.

Under what conditions, then, do we as a general rule see the reproduction of the species conducted? In no case where either parent is in a perfect physical condition, and often with one or both parents in an absolutely unfit condition to become progenitors because of their being in a pronouncedly unhealthy condition.

Parents in the last stages of consumption, with incurable diseases of many kinds, with scrofulous diatheses, and those with constitutions utterly wrecked by over-indulgence and long-continued violation of the laws of health, or by reason of repeated attacks of various acute diseases, are continually and always bringing children into the world.

What can be expected of the offspring of such parents? Only that their organizations will be to a greater or less extent imperfect even under the most careful attention to the conditions of the mother during the period of gestation and lactation.

In so brief a paper as this, it would be impossible to go to any extent into the consideration of all the pre-natal influences which might modify the condition of offspring. The laws of heredity under which certain types may be handed down from remote ancestors; the accidents and acute diseases to which the most

healthy women are liable during pregnancy; and the seeming contradictions of physiological laws in well-known observed cases, all these things have a marked influence, but they can be only incidentally alluded to.

Under the general proposition that only healthy parents can beget healthy offspring, it becomes apparent that the utmost care and attention should be given toward perfecting the health of the mother from the moment of conception till she ceases to nourish her child.

This care of course secures the highest possible development of the child in all respects, but its importance as regards the teeth is greater than in any other direction, for the reason that the teeth retain with comparatively little modification, the character which is given them at the time of their formation. The other parts of the body may have been but imperfectly nourished and so but imperfectly formed and developed and yet the recuperative power of the constitution may subsequently bring up to a near approach to health that which was imperfectly begotten, while the teeth will always bear testimony to their imperfect original construction. Consequently everything that tends to promote the health of the mother is indispensable to the perfection of the teeth, while everythnig calculated in any degree to lower the standard of health in the mother will be sure to prove more or less injurious to the teeth of the child.

It would be a work of supererogation to enumerate here the course and methods that mothers should pursue to secure the highest physical condition,—the whole matter would be summed up by saying she should conform entirely to hygienic laws, but it will never be out of place to emphasize the importance of mothers giving extraordinary attention to this subject.

You need only to cast your glance upon an hundred mothers whom you have known during the period of the rearing of their young, to note how entirely indifferent they generally seem to be with regard to this matter. The lives of excitement they lead, the late hours they keep, the pernicious habit of tight-lacing that many of them follow, their neglect of exercise and the kind of food they eat, all tend to show their indifference, while the persistence in such habits can tend to but one result, viz.: the bring-

ing into life of very imperfectly formed and poorly nourished offspring.

In a general sense there can be no controversy with regard to the propositions thus far so briefly laid down, and yet we see occasionally seeming contradictions of them. We may sometimes see parents of very poor physical condition, and whose teeth are of the poorest quality whose children will prove to be remarkably healthy and their teeth will astonish us by their strength and immunity from decay (caries). In such cases the law of heredity may and doubtless does play an important part, and the child probably inherits from remote ancestors the fine physique and strong teeth which belonged to neither of his immediate ancestors.

On the other hand, we may see the very reverse of this in the case of parents who are in comparatively perfect physical condition, with strong and sound teeth whose children will have an imperfect physique and very frail teeth. The same law of heredity may also explain this anomaly.

Again, we may find that a mother who will be in miserable health during the entire period of utero-gestation, whose appetite will be poor and capricious, and who does not take sufficient or properly nourishing food, may bring forth the most robust and healthy child, while on the other hand a mother who may pass through this entire period seemingly in perfect health, and who may strictly observe hygienic laws, will produce a delicate and sickly child. These last cited cases are in seeming contradiction to physiological laws, but they, with the others referred to, are only exceptions to the general rule and must not be counted on as any excuse for the slightest relaxation of vigilance over the health of all mothers during the period of gestation and lactation.

Of the influence of food upon the teeth, it might be thought that what has already been said would cover the whole ground, but it does not fully do so. Of course, if we had healthy parents to deal with, and they understood the laws of hygiene, and appreciated the importance of the strictest compliance with those laws, there would be no necessity for saying anything more. But, unfortunately, we have not such people to deal with generally; and sometimes those who have an understanding of what is

proper, and who seek to do all in their power to secure the highest physical condition for themselves, and consequently for their offspring, are unable, from diseased or morbid conditions, to obey every hygienic requirement. Many mothers, during the period of child-bearing, are very capricious in their appetites, often craving food that is the least desirable for them on general principles, and loathing that which would most certainly supply the requisite elements for their own and their child's complete nourishment. In such cases we must attempt to supply, by artificial means or by specially prepared foods, the elements which fail to be assimilated in the ordinary way.

As affecting the teeth especially, though also the general system the lack of the phosphate of lime in the tissues, is particularly observed in cases like those just referred to. These phosphates should be furnished in the ordinary diet in ample proportions; but in some cases, as above stated, the mother can not, and in others *will* not, use the proper diet; while in other cases, in which the most desirable food is taken, and, although digestion seems to be perfectly performed, yet the phosphates are evidently not thoroughly assimilated.

In many cases where the phosphates fail to be assimilated from the natural food they do seem to be from other sources.

It has been claimed by some practitioners that they have succeeded in materially improving the conditions of the teeth of offspring by the administration to mothers during pregnancy of the crude phosphate of lime.

Later, the syrup of the lacto phosphate of lime was introduced and extraordinary claims were made for it by the French physician who first called attention to it. He claimed that by the preparation of the phosphate of lime with lactic acid it was partially digested before being taken into the stomach, and thus was more easily and surely assimilated. Many practitioners, both of dentistry and medicine, feel confident that they have seen excellent results follow its use.

Another form of phosphates which greatly commends itself, is the preparation of wheat phosphates made by E. H. Sargent & Co., of Chicago. This seems to furnish an admirable method of administering the required elements, and is perhaps preferable to

any other. It is simply a condensed and easily digested form of phosphatic food, though there may be cases in which the syrup of the lacto phosphate of lime would be more easily tolerated.

There can be no question but that the habitual use of Sargent's preparation or of the syrup, by mothers during pregnancy and lactation, is likely to prove beneficial to the teeth of the children, and also to those of the mothers, and it should always be prescribed where there is probability of imperfection in the dental organs from either inheritance or impaired health of the mother.

The administration of either should be intermittent—that is, it should be used, say for a month, and abandoned for a month, then resumed and again abandoned, and so on.

Imperfectly as this subject has been presented, it should arouse the attention of the profession to the importance of urging upon all our patients, who are about to become mothers, the great necessity and the duty of their using every means within their reach that is likely to tend toward improving the teeth of their offspring, and to this end dentists should ask the coöperation of the family physician, and of the husband, which will be readily and gladly accorded when once its importance is apparent to them.

The younger members of the profession should give this subject their serious consideration, for the amount of good they may accomplish by making one of the cardinal principles of their practice the urging of this pre-natal care upon their patients can never be fully estimated, while the laurels they may win in establishing successful prophylactic treatment will be those they may well be proud to wear.

STATEMENT OF MORTALITY FROM BUREAU OF VITAL STATISTICS FOR SEPTEMBER gives the monthly death rate as 1.73 per 1,000. Total deaths, 970. Total deaths in August, 1,163. September, 1882, 1,032. September, 1881, 1,211. Greatest number of deaths from diarrhœal diseases, 143; diphtheria, 45; scarlatina, 36; typhoid fever, 44; croup, 17; typho malarial, 12; phthisis pulmonalis, 94; acute lung diseases, 72; pertussis, 12; cerebral meningitis, 23; Bright's disease, 9; inanition, 22.

Domestic Correspondence.

ARTICLE IV.

CINCINNATI, Nov. 6, 1883.

MR. EDITOR:

Cincinnati, the Queen of the West, the City of Music, the city containing more Germans to the square mile than any other spot outside of the Fatherland, and more dirt than any other city outside of Pittsburgh; the city of Graham, Drake, Blackburn, Longworth, the Musseys—illustrious father and devoted son—and Bartholow, is sometimes thought to be jealous of Chicago; but she is not. She looks with pride and wonder upon her overgrown younger sister, remembering well when one of her solid citizens could have bought the village on the lake.

Cincinnati has, according to the directory for 1883, 463 doctors, regular, irregular, and defective. Many of these are practicing pharmacy, others dentistry, while some have the title having taken it as a matter of education, while many are going through that trying ordeal, sitting around waiting for a practice, and others, having worried through, are simply waiting to die. The number of active practitioners, in proportion to the population, is comparatively small. It must be considered, however, that the large proportion of the midwifery work here is done by midwives, while old women and many other forms of the vulture tribe, prey on the poor practitioner.

Cincinnati has five hospitals. First, and largest, is the Cincinnati. A better building for a hospital, all things considered, the writer has not seen either in this country or Europe, unless, perhaps, St. Thomas' Hospital in London. The staff consists of

members of the Faculties of the Medical College of Ohio and of the Miami Medical College, and a number not belonging to these colleges. Its clinics are open to all students alike. It is supported by the city. Second in size, and number of its patients, is the St. Mary's Hospital. This is patronized largely by the Germans, probably 80 per cent. of the patients being of that class. It is under the charge of the Sisters of the Poor of St. Francis, and is supported by charity. Its staff consists, for the most part, of men not connected with a college but the Medical College of Ohio is represented. Third, is the Hospital of the Good Samaritan under the entire control of the Faculty of the Medical College of Ohio, its students only being admitted to the clinical lectures. Next comes the U. S. Marine Hospital, and then the Jewish Hospital. Besides, there are half a dozen private hospitals which to mention would be but to advertise.

Cincinnati has two medical colleges—the Medical College of Ohio, established in 1819, and having an average attendance of about 330 students; the Miami Medical College, the result of an un-united fracture of the Faculty of the Medical College of Ohio, which has resisted the efforts of both conservative and radical surgery. The students in attendance average about 110. There are other corporations, 'tis true, but they are irregular and defective, and it is bad enough to have them forced upon one's thoughts occasionally, without mentioning them. Besides these, we have one of the oldest dental colleges in the world, and a school of pharmacy. The Cincinnati University last summer made overtures to the College of Pharmacy proposing to absorb it, but the College of Pharmacy did not prove that kind of cotton. The University has made like overtures to the medical colleges, and met with like responses.

Cincinnati has two medical libraries; that in the Public Library being chiefly devoted to books, having the best of the American, English, French and German journals. That in the Cincinnati Hospital, though deficient in books, is rich in the journals of America and Europe.

Cincinnati has five medical societies. The Hippocratian, consisting of the ex-internes at the Cincinnati Hospital, meets annually.

The Obstetrical Society is a select body of men limited to twenty. Their meetings are "catamenial," they are a "regular" body, they "labor" hard, and the "flow" of wisdom is great. It is needless to remark that those members who have not reached the menopause are nearing it. Hæmatoma of the Vulva was one of the interesting cases reported at the last meeting by Dr. W. H. Wenning.

The Drake Medical Society, organized only last spring, is the youngest medical society in the city. It is also select. Its members number but fifteen, are the young members of the profession, and are all graduates of the Medical College of Ohio, and were in college at the same time. They meet at each others' offices, and are economical; they have to be. Interesting papers at recent meetings were: "The Use of Opium in the Diseases of Children," Louis Schwab, M.D.; "Otitis Media Purulenta," Chas. W. Tangeman, M.D.; "Gonorrhœa," W. H. Kelley, M.D.; "Ovariotomy," Chas. T. Locke, M.D. E. W. Mitchell, M.D., President; Geo. A. Fackler, M.D., Secretary. Meets every Tuesday evening.

The Cincinnati Medical Society, a fragment of the previously mentioned un-united fracture, meets every Tuesday night. Recent interesting papers were: "Scurvy," J. E. Eichberg, M.D.; "Locomotor Ataxia," Philip Zenner, M.D.; "Scarlatinal Rheumatism," W. H. Taylor, M.D. B. P. Goode, M.D., President; W. H. McReynolds, M.D., Secretary.

Cincinnati Academy of Medicine, established 1857, meets every Monday night. Interesting papers have been read recently on: "Color Blindness," Julia W. Carpenter, M.D.; "Cephalhæmatoma," with report of a case of the intra-cranial variety, E. S. McKee, M.D.; "The Despotism of Words in Science," Orpheus Everts, M.D. Cases of hæmorrhage from the bowels were reported by J. T. Whittaker, M.D.; cases pertaining to surgical treatment of pleuritic effusions were reported by Drs. Ransohoff, Whittaker, Jones, Krause and Mitchell; a case of "Abdominal Tumor," by James T. Whittaker, M.D., and Joseph Ransohoff, M.D. W. W. Seely, M.D., Dean of the Medical College of Ohio, is President, and W. H. Wenning, M.D., of the St.

Mary's Hospital, is Secretary. Short-hand reports are taken in full and printed.

Cincinnati has three medical journals—one weekly and one monthly, both devoted to general medicine and surgery; the other, a monthly, devoted to obstetrics and diseases of women and children.

The health of Cincinnati during the past summer and autumn has been marvelous. The week ending October 27, 1883, reported only 68 deaths, or 12.66 per 1,000, the lowest for ten years. The weekly death-rate has been below 100 all summer. This is bad for the doctors, for there has been a corresponding small amount of sickness, but for the undertakers it has been terrible. The poor fellows have been compelled to add on 50 per cent. to their charges, to keep up appearances.

In June the Legislature abolished the Health Board of Cincinnati, in answer to a petition from her citizens, and ordered an appointment by the judges of the Superior court. This, said judges refused to do, and the city was two months without health board or officer. Common Council then took the matter in hand, and elected another Health Board, which has been serving since August 1. It filled out the appointments, and so far seems to have disappointed everybody by doing its duty. District physicians, so-styled assistant health officers, were appointed, one for each ward, twenty-five in all, at a salary of $25.00 each per month. They are expected to look after the sanitary condition of the ward and doctor the sick poor. The city is entirely free from small-pox, and has been for one month past. Small-pox here makes sad havoc at times in the German quarters, as they number many anti-vaccinationists. The Health Officer has been struggling with the dessicating companies, the so-called "stink" factories, but he always comes off second. Money is a powerful power.

A pusillanimous penny sheet here has for the past two weeks been dosing out the doctors a half dozen each issue. It pretends to give a biographical sketch. Gives the age, height, weight, color of his hair, whiskers, eyes, etc., his manner of dress, of visiting his patients, his habits, and views on tobacco, temperance and religion. His residence and office, place of graduation, how

long in practice and how much his practice was worth. As to the latter point many were the untruths told; doctors whose practice hardly paid their office rent were down for $7,000 per annum, while another who is known to make visits for fifty cents was put down for $15,000 to $18,000. Every article had some attempt at wit, such as "a strawberry blonde," "whiskers of a crushed strawberry hue," "somewhat of a dude in his dress," etc., etc. Of course the whole thing was disgusting. Some doctors were written up, from no fault of theirs, the reporter having either obtained his points from other parties or from observation and imagination; others, of course, pushed their way in and were happy over a little cheap notoriety. The whole matter goes to show the greatest failing of the medical profession, viz. to exaggerate the amount of their income. It creates wrong impressions among the laity, causing them to think every doctor rolling in wealth, which is not the case. Then, too, it has the effect of making bills harder to collect, and every one knows now they are difficult enough.

Sir William MacCormac, I see, has been at Chicago, and the defendant at a reception at the Grand Pacific. Sir William visited also St. Louis and Louisville but evaded Cincinnati. Possibly it was because Cincinnati's great lights were not persistent enough in their inducements. Sir William is an elegant fellow and deserves great praise for the exceptional manner in which he conducted the International Medical Congress of '81; possibly he deserves the, in England, great honor of the Knighthood, but, we think, not half so much as that indefatigable and life-long worker in the profession, the unassuming, in England unexcelled, Johnathan Hutchinson. Who of the profession haven't for years heard the name of Johnathan Hutchinson on the lips of their brethren and seen it cut in the teeth of their patients? Who ever heard of Sir William MacCormac before the Congress of '81?

There has, for two months past, been a controversy going on in Cincinnati between the physicians and druggists. Complaints were made first in the Academy of Medicine early in September that many of the druggists were prescribing, that they were treating more gonorrhœa than the physicians; that they dis-

played too prominently the advertisements of quacks and their nostrums; that they in many instances sent medicine, ordered by physicians, wrapped up in quack medicine advertisements; that they substituted; that they refilled prescriptions too freely; that they advised patients of one doctor to discontinue him, recommending another; that in one instance one spoke disparagingly of medicine ordered by a physician, saying he had "a clapp mixture which beat that all to pieces;" that two were advertising their gonorrhœa mixtures in the daily papers, etc., etc.

A committee was appointed to confer with like committees from the Cincinnati Medical Society and the College of Pharmacy.

The druggists filed counter claims that the physicians were in some instances dispensing their own medicine and that they were prescribing proprietary and secret remedies.

After considerable discussion among the committees the following rules have been drawn up:

I. That pharmacists shall not prescribe medicines.

II. Pharmacists shall not too frequently fill prescriptions which might lead to disease or vicious habits.

III. Pharmacists shall only supply medicines on prescriptions, or where the complaint is stated by the customer to be one dangerous to life.

IV. The right to refill the prescriptions when presented by the person to whom they were issued by the physician is acknowledged.

V. Physicians should not dispense medicines except in cases of emergency, nor prescribe proprietary, secret or copyrighted medicines.

VI. The prescription when in the hands of the pharmacist and filled, shall be the latter's property, as they may be necessary for protection.

VII. The use of prescription blanks by physicians with the address of any individual pharmacist on them is liable to misconstruction and shall be discontinued.

VIII. The evils arising from the wholesale use of patent medicines is recognized and their use discountenanced.

IX. A Board of Arbitration, consisting of five physicians

and five druggists, shall be appointed, who shall subscribe to these rules. This Board shall hear all complaints against any subscriber to these rules for their violation and shall decide the disputes.

The disagreeable part of this is that the daily press has been writing us up for several days and making more out of it than any one else. Respectfully,

ABRACADABRA.

MOLLUSCUM SIMPLEX IN THE LABIUM MAJUS.

A girl perfectly healthy, twenty-one years of age, noticed a swelling on the genital parts two years ago, but since eight months the tumor grew rapidly. Three weeks ago while rubbing the tumor the latter burst and there was a great deal of hæmorrhage. The tumor is pedunculated and the pedicle is inserted on the labium majus of the left side. The insertion is linear, and extends on the whole length of the labium majus. Its height is that of the lip and its external surface corresponds with that of the labium majus. The external appearance of the pedicle is exactly that of the labia. The body of the tumor consists of a certain number of lobules some being large, others adjoining these being small, and there are yet others which are placed like parasites on the other. The whole form resembles a grape. The epithelium of all the lobules is that of the genital parts, but there is between the lobes an erosion from which flows a bloody liquid. The lobes are in the form of a sac and resemble false hæmorrhoides. The removal of the tumor was executed without loss of blood.—*Le Progrés Médical.*

Society Reports.

ARTICLE V.

CHICAGO MEDICAL SOCIETY.

The Chicago Medical Society inaugurated the approaching winter sessions or series of meetings on the evening of the 15th inst., after a vacation of two months, and it is hoped the lively interest will be continued as that evinced by the large attendance of members at this time, and the *jeu d'sprit* present will be productive of many valuable and interesting papers and essays ere the close of the current year.

The President, Dr. D. W. Graham, gave a short address of welcome in the most appropriate manner, and Dr. L. H. Montgomery recorded the minutes.

The first paper was an extensive one, being "The History of Insanity in Chicago," compiled from an analysis of three thousand cases treated at the County Insane Asylum during the past twenty years, by Dr. S. V. Clevenger, special pathologist Cook County Insane Asylum. The following synopsis is hereby appended:

Many things have interposed to baffle his endeavors to present an exact history of the medical progress of this asylum, giving statistical information, etc.; for during the time prior to the great Chicago fire, which destroyed all the county records, and the paucity of asylum papers dating earlier than 1878, the asylum books were kept in a very careless manner, blotted, smeared and full of errors. At this time the superintendent assuming charge had transferred to new pages all the case histories obtainable from previous records and the fuller details obtained from friends of patients. This mass of information has

afforded the material for this article, but in analyzing cases earlier than 1878 many sources of error must be eliminated before they can be made available statistically. In *ante bellum* days there was no county asylum; at that time and during the year 1866 insane persons were treated in the wards of the Poor-House, also subsequently and during the period from October 1, 1867, to January 10, 1871. Some very comical stories are told of this *regime*, from which the writer deduced that the welfare of a patient was insignificant alongside the chances of stealing a dollar or so, in those times. January 1, 1871, the Poor-House had outgrown itself, and the necessity for differentiating insanity from pauperism had become apparent enough to justify the erection of a large brick building capable of accommodating 300 patients. A new superintendent was appointed who started out with true medical *animus* to better the condition of the insane, but the book keeping and records were not satisfcatorily kept. January 1, 1875, a change was made in the appointment of superintendent who served until January 1, 1878, at which time the present incumbent's term began, and who served uninterruptedly to the present time. The writer of the paper had incorporated some sixteen different tables, showing the number of admissions each year (male and female), recoveries, improved, sent to State Hospital, died, unknown, also the duration of residence in asylum of male and female patients, occupation, nativity, maximum per cent. minimum per cent. and mean per cent. of those who recovered, improved each year, etc., and lastly a table showing the psychoses of patients admitted during the fiscal year ending August 31, 1883 (re-admissions included), which to elaborate upon without giving the figures complete might do the author an injustice. Suffice to say that in comparing the figures to some writers in medical journals, there is much unnecessary cavil at the term "recovered," as used by asylum statisticians.

One reason for this probably is that where 100 cannot be obtained in footing up any table requiring it, differently based calculations without all the factors will require additional study and greater chance of error.

The author quoted figures of the California asylum at Napa, showing the increase of insanity in that State, from 1 to every

833 persons in 1860, to 1 in 383 in 1880, and that in this proportion there will be one insane person to two sane in the year 2000 in that State. However, this apparent resulting increase occurs in all new countries. Just so it is with the Chicago insane, the proportion of whom to the population is somewhere in the neighborhood of the California figures of 1880 (1 to 383), as there is a great influx of paupers from Europe, "assisted" by the English government, into Chicago. The statistics of the Kankakee and Elgin asylums, so far as they relate to Chicago insane, should form an integral part of future estimates, in connection with our county asylum, in arriving at an idea of the proportion of insane in our city population, with their death and recovery rates.

Several hypertrophied brains and hearts were exhibited, one heart that of a woman, weighing twenty-four ounces; also, a brain weighing fifty-seven ounces, of a Swedish physician, the "pons" portion being unusually developed. The man had been remarkably intelligent during a portion of his life.

Dr. J. G. Kiernan reported a case of "Insanity from Using Quinine," this being the third one that he has observed during the past two years. The two previous cases were reported two years ago in the *Journal of Nervous and Mental Diseases*, 1881. The case to-night is R. B., æt. 38; has a sister epileptic; a maternal grandmother and a maternal aunt died from "rush of blood to the head." The patient resembles the maternal side of the house in appearance and disposition. He has never been able to take even a small quantity of beer, for fear of it affecting his head. Having recently come from a malarious district into Chicago, he was attacked by fever of a quotidian type. Upon the advice of a fellow workman he purchased and took ℈i. of quinine sulphate at a dose. In an hour thereafter he was violent and destructive, smashing furniture purposely. His friends called the doctor at this stage. There was a wild, purposeless violence, but no delusion or hallucination present. He was very incoherent and hilarious. This condition disappeared in two hours, he having meanwhile been given a hypodermic of conine, which controlled his movements. A second dose of the quinine led to exactly the same results, and its astrological influ-

ence was, therefore, clear. Since disuse of the quinine there has been no further psychical phenomena. The writer knew of but one other case in literature of transitory fury due to quinine. Such cases as these are likely to become of medico-legal importance. He had, however, heard of three instances in which the use of quinine has been alleged as an excuse for certain escapades seemingly the result of intoxication.

Dr. Clevenger inquired of Dr. K. if there was present any predisposing or exciting causes in all his cases. Answered, all the cases had a hereditary or neurotic taint. He then quoted from Wood, who said in 3,000 cases where quinine was administered the heart's action in three of them became depressed, similar to the action of salicylic acid in some cases.

Dr. R. H. Engert had always found that quinine acted as a tonic to the heart, but recited a case where a man in Mississippi had taken a large dose, became delirious from its effects, and died.

Dr. E. Andrews offered the following resolutions, which were adopted:

That the chair appoint a committee of five, of which the president shall be chairman; that this committee is hereby instructed to confer with the commissioners of the public library, on the subject of increasing the medical department of that library, and endeavor to agree with the commissioners upon a plan of action, and to report the same to this society for ratification.

That this plan shall, if possible, embrace the following features:

1. That the surplus funds now in the treasury of this society shall be appropriated to the purchase of medical and surgical books and journals for the Public Library.

2. That a certain proportion of the annual dues hereafter shall go for the same object, together with such voluntary donations as the Library Committee hereafter to be appointed may succeed in determining.

3. That the Commissioners of the Public Library shall take good care of the works purchased, and add a suitable sum yearly to be applied to the same objects.

4. That this society will claim no exclusive use of the medical books and journals, but we desire that they shall be placed

in the consultation department, and not in the loanable list.

Resulting in the following appointments:

Drs. D. W. Graham, Edmund Andrews, Oscar C. DeWolf, G. C. Paoli, E. Ingals, Committee.

The Society adjourned.

L. H. M.

CHICAGO PATHOLOGICAL SOCIETY. Regular meeting October 8, 1883.

The society was called to order by the President, Dr. Angear.

The minutes of the August and September meetings were read and approved.

Dr. Fannie Dickinson was elected to membership.

Dr. F. C. Knight was proposed for membership by Dr. G. F. Lydston and the Secretary.

The society then listened to the reading of a very interesting paper by Dr. H. M. Lyman on Apoplexy, in illustration of which the author gave a detailed history of numerous interesting cases.

In diagnosis, one needs to exercise careful judgment. Alcoholic intoxication and an apoplectic seizure may co-exist. Hysterical women have fallen in an attack of unconsciousness, with resulting hemiplegia, which, in a short time, may be transferred to the other side of the body. Apoplexy may be simulated by uræmic poisoning.

In apoplexy the temperature first falls, then rises.

In treating the worst cases, nothing is of avail; in those milder, we may employ leeches, wet cups, general bleeding only when the right heart is involved. Attention should be directed to the state of the bladder, and the bowels be kept open.

For medication give moderate doses chlorate of potassium, and watch its action upon the kidneys; and tincture aconite root.

In the stages of convalescence, dietetic general treatment, electricity and massage.

The paper being before the society for discussion, the President, Dr. Angear, remarked his interest in the paper and its subject-matter. To the profession the diagnosis is all important, and in some cases, when so diagnosed, apoplexy had not occurred.

He had not a large experience, but a case seen years ago would bear relating in which a lady suffering from headache, reflex pains, pain in the left shoulder and arm, had been treated for uterine disease, and was suddenly seized with apoplexy, and death, the post-mortem revealing this condition. The disease of the brain is partly revealed by these obscure symptoms, disturbances of the mucous membrane, as well as interference in the nutrition of the skin, on account of which bed-sores form quickly. Fatal syncope is often diagnosed as apoplexy. The diagnosis should be carefully studied.

In another case, when hastily summoned, found a man speechless, hemiplegic, the eye natural, and sense unclouded, which condition was quickly relieved by an emetic and the throwing up of a large amount of undigested food. Had death occurred the diagnosis would probably have been made of apoplexy, and that of the nervous variety may have really existed.

A member of the County Hospital Staff present, then spoke of a case of medico-legal interest seen lately. The patient was in coma-hemiplegic, with all symptoms of apoplexy, and had been picked up in this condition in the street. No signs of foul play were noticed; remained thus 48 hours, then died; post-mortem examination revealed a large blood clot upon the left lobe of the brain and a fracture of the skull through the left parietal to the temporal bone. No bruises were visible on the scalp. The cause of the fracture may have been a blow from a sand-bag.

Dr. C. J. Lewis thought Dr. Lyman had given all the points to bear in mind in diagnosis, and briefly related a case of a man whose skull was fractured by a fall in leaping from a window. The symptoms were of apoplexy, hemiplegia, etc. In trephining there was found extensive vascular rupture producing great pressure, although there was but slight pressure from the bone.

Dr. Tibbets briefly spoke of two recent cases, after which the society proceeded to consideration of miscellaneous business.

The President remarking that as there might be some complaint made during the winter on account of the present location of the society being insufficiently central, and as the present place of

meeting had been secured experimentally only, suggested the advisability of discussing the matter.

Dr. Lyman moved that the officers of the society be appointed a committee to look up a suitable hall or other convenient place for the society and report at the next meeting. Carried. Dr. Lyman's name was, on motion, added to the above committee.

Among those present were Drs. Angear, Beecher, Dobbin, Harper, Lewis, Lyman, Treat, Tebbetts and several visitors.

The society, on motion, adjourned.

J. H. TEBBETTS,
Secretary.

MICHIGAN STATE BOARD OF HEALTH. Reported for the CHICAGO MEDICAL JOURNAL AND EXAMINER.

The regular meeting of the State Board of Health was held October 9, 1883, at its office in the Capitol at Lansing, the following members being present: Arthur Hazlewood, M.D., of Grand Rapids; C. V. Tyler, M.D., of Bay City; J. H. Kellogg, M.D., of Battle Creek; and Henry B. Baker, M.D., Secretary.

The Secretary presented his annual report of property, showing valuable accessions to the Library of the Board by gifts and exchanges; also his quarterly report of work done in the office, the regular correspondence alone, exclusive of many postal card communications not copied, making 572 pages of the letter-book record.

From week to week, as magazines and other accessions to the library are received, considerable work is necessary to make references by which, at any time, papers on a given subject may be found; also to look up papers on various subjects, and to pack and ship books, etc., to those who undertake to write papers for sanitary conventions, or other uses. During the past quarter, three such requests for books and papers have been filled.

A letter from Dr. Whelan, on behalf of the common council of Hillsdale, invited the Board to hold a sanitary convention in that city. The invitation was accepted, the convention to be held at such time as shall be agreed upon hereafter. A letter was read from Rev. J. Pierson, D.D., of Ionia, relating to holding a

sanitary convention in that city. It was decided to hold one in Ionia, if practicable, early in December.

A communication from Hon. C. A. Gower, requesting this Board to examine plans for a proposed new building at the State Reform School, was received and acted upon.

A communication was read from Dr. Isler, of the Upper Peninsula, requesting that the documents issued by this Board on the prevention of contagious diseases, be translated and published in the Scandinavian and Finnish languages, for the use of miners and others who do not read English, and among whom both scarlet fever and diphtheria are now present. The leaflet on communicable diseases (No. 47) was ordered to be translated and published in the Scandinavian, French, and Polish languages.

Announcement of the meeting of the American Public Health Association was made, and it was voted to hold a meeting of the Board in Detroit November 18, to attend the meeting of the Association, and to transact such business as may come before the Board.

A communication from the chairman of the Ontario Provincial Board of Health gave notice of a sanitary convention at London, Ontario, November 16 and 17. Drs. Baker and Hazlewood were appointed to attend this convention.

The Secretary was directed to procure from the county clerks, for the uses of the Board, a list of the physicians in the several counties, and their postoffice addresses if practicable.

A memorial was read from the citizens of Morley, Mecosta county, relative to the throwing of dust and other refuse into a stream, a subject not controlled by the State Board, but by the courts. The memorialists had been so informed by the Secretary.

The Secretary presented a *résumé* of the work of other boards of health.

The Boston, Mass., Board of Health has lately placed measles on its list of diseases to be reported to the Board by householders and physicians. That Board has publicly offered to superintend the process of disinfection, if requested so to do by the householder. Dr. Kellogg thought it desirable that boards of health superintend disinfection after contagious diseases, where possible.

He thought disinfection by sulphur would be more efficacious, if carried on in a moist atmosphere.

Drs. Hazlewood and Baker were appointed a committee to examine and report on text-books on hygiene with especial reference to alcohol, if any such books are sent to the Board for examination.

Dr. Kellogg, for himself and Dr. Avery, special committee on the present knowledge respecting diphtheria, reported a paper embodying a large number of replies to a circular of inquiry, some being very valuable. The report was accepted with thanks, and ordered printed in the annual report.

The next meeting of the Board will probably be for the examination of plans for buildings at the State Reform School.

REPORT OF FRED. H. WINES, SECRETARY, TO THE ILLINOIS STATE BOARD OF PUBLIC CHARITIES, RESPECTING THE TENTH ANNUAL SESSION OF THE NATIONAL CONFERENCE OF CHARITIES, AT LOUISVILLE, KY., SEPT. 24–28, 1883.

GENTLEMEN:—I have the honor and pleasure of making the following report of my attendance upon the annual meeting of the Conference of Charities and Correction, which was in session at Louisville from the 24th to the 28th of September. During the greater part of this time the President of the Board, Dr. J. C. Corbus, and Mr. Whipp, my assistant in the office, were also present.

In several respects this has been the most interesting and profitable meeting which we have held, thus far. At Chicago, in 1879, there were but twelve States represented; at Cleveland, sixteen; at Boston, including the District of Columbia, there were nineteen; at Wisconsin, twenty-four; but at Louisville, thirty-three. We went there in hope of securing a full representation from the States south of the Ohio river, and in this we were sccessful. I think, too, that these States will send delegates regularly, hereafter. The number of delegates in attendance at Louisville was unusually large; it could not have been much, if any, less than two hundred persons from outside the

bounds of Kentucky, and with the Kentuckians it probably reached three hundred. The *personnel* of the Conference was never finer than this year, nor the papers read better worth attention, nor the discussions freer from irrelevance and crudity of thought. Every moment of our time was occupied with the business of the session, which went forward rapidly and logically to its conclusion, and all who were there seemed to be satisfied with the result. From the people of Louisville and from the State officers of Kentucky we received every attention that we could have desired. I only regret that more of our own Board could not have been there.

MONDAY.

We met on Monday, in the evening, when addresses of welcome were made by Mayor Jacob, Gov. Knott and Senator Williams, which were responded to by Messrs. Sanborn, of Massachusetts, Vaux, of Pennsylvania, Mills, of North Carolina, and Knapp, of Florida.

My address, as President, was devoted to an exposition of our position and function as an organization apparently destined to exert considerable influence upon legislation and the future of charitable and correctional work in the United States.

TUESDAY.

Tuesday morning was devoted to hearing reports from the various States represented. There were so many of these, and the reports made were so unnecessarily long and minute, that the Conference was unable, during the four days that we were together, to hear from more than a part of them, but leave was given to any State not heard to file a written report for publication in the proceedings. The experience of this year led to the formation of a standing committee on Reports from States, whose duty it will be to see that reports are made in writing, and, as far as possible, placed in the hands of the committee at least one month in advance of our next meeting, so that the committee can prepare a summary of whatever is most interesting and important in them. This will not prevent the presentation of the reports separately, in addition.

We had two admirable reports on this day from the standing committees on the Work of the State Boards of Charity, by Bishop

Gillespie, and on Charity Organization in Cities, by Mr. McCulloch. Special prominence was given to the latter topic, which was discussed both in the afternoon and at night. Among those who participated in the debate were: Messrs. Putnam, of Boston, Fairchild, of New York, Walk and Garrett, of Philadelphia, Elliott and Barbour, of Detroit, Shattuck, of Cincinnati, and Mrs. Spencer, of Washington.

An interesting feature of the meeting on Tuesday was the address of Senator Vance, of North Carolina. The Conference listened with marked satisfaction, also to the addresses made by Rt. Rev. Father Bessonies, of Indiana, and Bishop Robertson, of Missouri.

WEDNESDAY.

Wednesday was given up to the consideration of the prison question. The standing committee on Crimes and Penalties reported, by its chairman, Mr. Z. R. Brockaway, Superintendent of the Reformatory at Elmira, New York, the only prison in the United States from which convicts are released on ticket-of-leave. Mr Brockaway's reputation as an able writer on this subject, as well as a most successful prison officer, is well known to you, but it seemed to me that in this report he surpassed anything which he has previously made public. The programme arranged by him for the day was very full, and included papers by Judge Young, of the Supreme Court of Minnesota, on the Reformatory Idea in Penal Treatment; by Miss Hall, of the Women's Prison, at Adrian, Michigan, on the Reformation of Criminal Girls; by Miss Mosher, formerly of the Women's Prison at Sherborne, Massachusetts, on Discipline in Prisons; by Gen. Brinkernoff, of Ohio, on what he called Post-Penitentiary Treatment of Criminals, that is to say, on police supervision of prisoners after their discharge; and by Judge Henry of the Supreme Court of Missouri, on Aid to Discharged Criminals. There was not as much time for discussion of these valuable essays as many desired, and some prison officers who were present, among whom I may mention Col. Lipscomb, of the South Carolina penitentiary, were not heard, which was the occasion of considerable regret.

Mrs. Barney, of Rhode Island, gave us a brief account of the efforts made by the Women's Christian Temperance Union to

have female matrons appointed at the central police-stations in cities.

Gov. Blackburn, of Kentucky, made an earnest and feeling speech, in which he pledged himself to devote himself for the remainder of his life to the cause of prison reform.

Other speakers were: Mr. Wilson, of Missouri, Gen. Taylor (a nephew of President Taylor), Chief of Police of the city of Louisville, Dr. Morris, of Baltimore, Dr. Cadwalader, of Philadelphia, Richard Vaux, Mrs. Cobb, of Milwaukee, Mrs. Beveridge, of Chicago, and some whose names I cannot at this moment recall.

But all will agree, I think, that the culminating point of interest was reached when, in the evening, Mr. George W. Cable, of New Orleans, the famous novelist, rose to read his carefully prepared attack upon the lessee prison system as administered at the South. For more than two hours he held his audience as if under a spell, while he quoted from the official reports of Southern prison officers and lessees, and drew from them inferences which, if they bear the test of examination, must, when they attract the notice of the Southern people, result in the abolition of the abuses which he depicted. When he took his seat, no one offered any defence of the system, but Gen. Anderson, of Kentucky, thrilled us by a fiery speech denouncing the wrongs perpetrated under it. Both Mr. Cable and Gen. Anderson were loudly applauded. It is said that Mr. Cable's article is to appear in the *North American Review*.

THURSDAY.

The Department of Justice sent a representative to the Louisville meeting—Mr. Haight, Inspector of Prisons in which United States prisoners are confined. There not having been time to hear him on Wednesday evening, he read, on Thursday morning, a brief but interesting account of the relation of the National Government to the prisoners of the country.

Dr. Bell, of Louisville, was introduced and spoke eloquently of the pleasure and advantage which our meeting had been to the people of the city and the State, and the influence which it would exert in the South.

Then followed a remarkable address by Rabbi Sonneschein,

of St. Louis, on Hebrew Charity in the Middle Ages, delivered with great animation and enthusiastically applauded, especially the happy allusions made by him to Christianity, and his definition of charity as justice, the repayment of a gift.

The report of the standing committee on Preventive Work among Children was read by the Chairman, followed by a brief report by Mr. Coffin, of Indiana, on the International Congress at Paris composed of representatives of institutions and associations interested in child-saving. Judge Ferris, of Nashville, Tennessee, gave an account of his own extraordinary success in Placing Destitute and Homeless Children in Private Families, and Judge Lewis, also of Tennessee, read a paper entitled Industrial School Work. The session was closed by a paper from Mr. Letchworth, of New York, on the Classification and Industrial Employment of Destitute and Delinquent Children.

We spent the afternoon and evening at the House of Refuge, by invitation from the managers, who provided an elegant supper. We were invited, on the same evening, to the Central Lunatic Asylum, at Anchorage, and a part of the members went there, where they were equally hospitably entertained. The House of Refuge, under the superintendence of Mr. Caldwell, has reached a high point of excellence, and perhaps has no superior in this country, in many of the most important elements of successful reformatory work. The children were all assembled in the chapel, and were talked to, Mr. Mills, of North Carolina, bearing off the honors of the occasion by his quaint remarks on "the all-important subject of tar." The evening was spent in listening to accounts of reformatory institutions in New York, Pennsylvania and Ohio, in which Messrs. Fulton, Fay, Collins, Watson, Cooley, Douglas, and others, participated. There was not nearly time enough for all who had something to say, and the officers of reformatory institutions, of whom quite a number were present, organized themselves into a section on the following day, for the completion of the discussion.

FRIDAY.

Friday was a field-day, when all that had been overlooked or postponed found place. The first topic considered was the Care of the Chronic Insane, which was treated by Dr. Wardner, of

the Illinois Southern Hospital for the Insane, at Anna. Among those who remarked on Dr. Wardner's paper were, Dr. Bryce of Alabama, and Dr. Griffin, of South Carolina.

Dr. Isaac L. Peet, the eminent principal of the New York Institution for the Deaf and Dumb, read a paper on the Education of Deaf Mutes. It happened that there were a good many teachers of the deaf present, from Ohio, Nebraska, Georgia, South Carolina, and elsewhere, and they, under the lead of Mr. Noyes, chairman of the standing committee on this subject, discussed Dr. Peet's paper. The statements of Mr. Gillespie with regard to the training of the ear by the use of the audiphone, awakened so much interest that the medical men present took it up, and Dr. Coomes, of Louisville, described a novel instrument for testing the degree of sensibility in the auditory nerve by the aid of the microphone.

Dr. Walk, chairman of the standing committee on Preventive Medical Charities, read his report, which was accompanied by a paper on First Aid to the Injured, by Mr. Pine, of New York.

The last paper read was by Dr. Dewey, of Kankakee, on Building Plans for Public Institutions, concerning which it would have been appropriate to quote the Latin proverb, *Finis coronat opus.*

At the night session we listened to several admirable farewell speeches, three of which were by gentlemen of Louisville, namely: Mr. Caldwell, Congressman Willis, and the venerable Judge Bullock, who still retains his power to charm his hearers. The customary resolutions of thanks were adopted, some items of unfinished business were attended to, and the Conference adjourned.

RESOLUTIONS ADOPTED.

In this rapid résumé of our proceedings, which has, I trust, given some idea of the extent of ground covered and the variety and sustained interest of the papers and discussions, I have purposely omitted any reference to the action of the Conference upon other questions brought to its notice.

Concerning the death of Dr. H. B. Wilbur, of Syracuse, N. Y., the following resolutions, offered by Mr. Sanborn, were adopted by a rising vote:

"*Resolved*, That in the death of Dr. Hervey B. Wilbur, of New York, the Conference of Charities loses one of its earliest, most active and most valued members, who in his own specialty stood foremost, and whose wide acquaintance with other specialties, made his suggestions and criticisms of the highest worth to inspire, to correct, and to continue in action those practical means of administration, upon which the success of a public charitable system depends."

A committee was appointed to take suitable action respecting the International Penitentiary Congress, which has been called to meet next October, in the city of Rome, and brought in the following report, which was unanimously adopted:

"The Conference of Charities and Corrections, convened at Louisville, Ky., September 24-28, 1883, and representing the organized and individual charities and penal and reformatory institutions in the several States and in the District of Columbia, calls the attention of the President and Congress of the United States, and of the Governor and Legislature of each State, to the International Congress to convene at Rome, in Europe, October 15, 1884, and urges upon each the importance to this country, to our institutions, and to humanity, of a suitablere presentation of these States in that International Prison Congress.

"An American philanthropist, the late Dr. E. C. Wines, organized and put into action the International Prison Congress, and he took an active part in its meetings in London, in 1872, and again in Stockholm, in 1878, as Commissioner under appointment, and this country and Europe are reaping benefits resulting from the able and enlightened discussions at these meetings. Many important questions of criminal jurisprudence, of prison discipline, and of preventive measures will be before that Prison Congress for discussion and solution, and the United States, having institutions the most free, humane, enlightened and progressive of any in the world, cannot afford to withhold their aid or be absent from a congress dealing with such questions. Therefore this Conference of Charities and Corrections respectfully asks that Congress take due action to send to that coming meeting of the International Prison Congress three representatives, each from a different part of the country, to take part in its discussions

and deliberations, and to bring to the United States the advanced wisdom and best results of its labors."

M. D. FOLLETT,
W. G. BULLOCK,
JNO. W. HENRY,
A. H. YOUNG,
Z. R. BROCKWAY.

Mr. Letchworth offered the following, which were also adopted:

"*Resolved, by the National Convention of Charities and Corrections of the United States*, That T. B. Ll. Baker, Esq., of Hardwicke Court, Gloucester, England, be invited to visit this country and attend the annual session of the Conference next year in the city of St. Louis.

"*Resolved*, That this action is not only an expression of our desire, but a recognition of the influence which Mr. Baker has had in molding, by his writings, and by his correspondence, the views of the Conference upon the important subjects which have come before us for our consideration."

ORGANIZATION.

St. Louis was chosen as the place of next meeting. Mr. Letchworth, of New York, was elected president for the ensuing year, and Bishop Robertson, of Missouri, vice president. Some changes were made in the list of corresponding secretaries, which was very much enlarged. Mr. Wright, of Wisconsin, retains his place as recording secretary; Mr. Milligan, of Pennsylvania, is promoted to be honorary secretary, in place of Mr. Sanborn; and the regular secretaries chosen are Dr. Hoyt, of New York, Mr. Caldwell, of Kentucky, and Mr. Hart, of Minnesota. The new standing committees and their chairmen are as follows:

On Reports from States: Fred. H. Wines, of Illinois.

On Charity Organization in Cities: C. S. Fairchild, of New York.

On the Organization and Management of Prisons and Penitentiaries: A. G. Byers, of Ohio.

On the Organization and Management of Reformatories and Houses of Refuge: A. E. Elmore, of Wisconsin.

On the Organization and Management of Poor-houses: H. H. Giles, of Wisconsin.

On Police System and Administration: F. L. Jenkins, of New York.

On Provision for the Chronic Insane: John B. Chapin, M.D., of New York.

On Provision for Idiots: Mrs. C. R. Lowell, of New York.

This is, of course, merely an outline of the proceedings, which were much more satisfactory than than they are here made to appear. I have not been able to name nearly all the speakers. It was noticeable that we had more speakers, and they spoke more briefly and to the point, than at any previous meeting, and there were but few who rose without having something of importance to say.

The excellent choir of the House of Refuge added much to our enjoyment.

Our special thanks are due to the local committee for their courtesy, forethought and aid.

With Mr. Letchworth as president, an equally good meeting, possibly a better, may be looked for at St. Louis. The time is not yet decided, but the sentiment of the members seemed to be in favor of May or June, rather than in the autumn.

All of which is respectfully submitted.

FRED. H. WINES, Secretary.

THE *St. Louis Medical and Surgical Journal* has, after late changes, the following editorial staff: Thos. Rumbold, M.D., editor and proprietor; John B. Keber, M.D., assistant editor; Frank M. Rumbold, business editor. Associate Editors:—H. Christopher, A.M., M.D., St. Joseph, Mo.; Wm. C. Byrd, M.D., Quincy, Ill.. A. E. Prince, M.D., Jacksonville, Ill.; LeGrand Atwood, M.D., St. Louis.

Editorial.

THE INTERVENTION OF THE STATE IN MEDICAL AFFAIRS.

The questions which have lately been suggested touching the relations of medicine and medical men to the State, are daily acquiring more interest. They have given rise to a number of issues which at the outset could scarcely have been considered as probable results of the first laws framed with a view to the regulation of the practice of medicine. Some of these issues we have undertaken to discuss in previous numbers of this journal. The whole subject will acquire an added interest for those who take the pains to read Professor Huxley's address, lately delivered at the annual distribution of prizes at the London Hospital Medical College, and printed in the *British Medical Journal* of October 18, 1883. The name of the distinguished speaker, no less than the interest attaching to his subject—"The Intervention of the State in the Affairs of the Medical Profession"—ensures for both a respectful consideration in all English-speaking countries.

Prof. Huxley practically presents three questions: 1. Why should the State interfere with medicine and the medical profession? 2. If there be ground for such intervention, what should be its extent? 3. If such intervention be right and proper, how can it best be carried into effect? The answers which he proposes to these several inquiries, seem to us eminently wise and judicious; and some of the commentaries they suggest are interesting to us on this side of the Atlantic.

With respect to the first question, the speaker took the ground that it was not the duty of the State to take medical charge of the public, to protect it against incompetent persons in general, and

in particular against quacks and impostors. He thought that it was more wholesome for the public to take care of itself, wherever it can do so, in this as well as all other matters; and that, on the whole, there should be no interference with the liberty of each person to do that which he likes, when he does not interfere with others. The actual impossibility (which all reasonable men must admit, and of which we, in the State of Illinois, have seen the most conspicuous and notorious examples) of absolutely prohibiting the practice of medicine by people not specially qualified for it, is freely admitted by Professor Huxley. The old lady who orders a cranberry poultice, the druggist who undertakes to relieve the pain of an aching tooth or of any other afflicted organ of the body, will enjoy these peculiar pastimes in the face of all legal restrictions. The charlatan will do no less, and always more. *Facilis descensus Averni.* He has smiled equally at the British, Gallic and Teutonic barriers erected to bar his progress. Where there is a throne, there will always be a pretender. The shadow will always follow the substance. We shall always have him with us. Whether the truth or its counterfeit shall prevail, is determined not by a national legislature, but by the extent of the diffusion of knowledge among the people whose feeblest index that legislature often is.

Professor Huxley, however, strikes the key-note of the whole question when he points to the death of the individual citizen as the important moment which the State should officially recognize. Here the volition of the individual ceases. In civil and criminal causes, the law should be able to have recourse to persons qualified to give expert evidence. Here lies the justification of the intervention of the State. It says to one class of men, "Practice medicine, if you like, on any basis, on any theory, whether you are qualified or not qualified;" and, to another class, "Consult whom you choose, pay whom you will for attendance upon you in your illnesses; but before I can receive from you a certificate of death, before I can appoint any of you to my civil or military service, the standard of my qualifications must be attained. The giver of the certificate, the incumbent of the office, must be those whom I can recognize as fit for such service." In brief, the State intervenes only at those points where the

State touches the individual. With the old woman's elder-flower tea, with the druggist's cough panacea, with the quack's startling announcement of the discovery of the cure of consumption, the State has no more to do than with the numerous patent religious enterprises of the day in which we live.

Justifying, on this admission of its necessity, the intervention of the State to this extent in medical matters, the speaker went on to briefly describe the ancient sources of the license to practice in his country, including the universities, guilds, corporations, and even the Archbishop of Canterbury, who has lately retired from the business. The year 1858, the date of the Medical Act, barely twenty-five years ago, was the relatively recent beginning of the present improved condition of affairs. We, of this country, looking upon the praiseworthy condition of the standards of medical education in Great Britain cannot certainly ascribe all their excellence to the changes effected in the licensing bodies by the Act of 1858. We cannot but be sure that the average British practitioner of to-day is of the quality that he is, not because of the improvements since 1858, but in the face of the "fine old crusted abuses" and of the caricatures of a respectable source of power and authority, which existed before that year.

Certain admissions here made by the distinguished speaker are very significant. He says, speaking of the condition of affairs, not then but now: "Unfortunately, it is equally certain that there remain two or three black sheep — licensing bodies which simply trade upon their privilege, and sell the cheapest wares that they, for shame's sake, can supply to the bidder." Here is a remarkable admission from the lips of one who knows of what he speaks, and who speaks with authority. No news indeed for Americans well informed as to medical matters in Great Britain! It is an admission which should afford us neither satisfaction nor encouragement. Still, as a matter of fact, it teaches us in a most unmistakable manner, that in that country where the State does visibly and powerfully interfere in medical affairs, the same great field is left vacant where, as in this country, avarice on the one hand and ignorance on the other, can set up their unscrupulous mart and indulge in their disgraceful traffic!

Nor is this all. Professor Huxley goes on to show that there is another defect in the existing system, as a result of which the licensing power may authorize practice on the basis of an acquaintance with either medicine or surgery alone. The surgeon, for example, totally unacquainted with either medicine or midwifery, may be thus accredited to the public, and successfully embark upon the deep of pecuniary profit with a miserably inadequate professional outfit.

The report of the commission having in view the correction of these obvious defects, is characterized by Professor Huxley as an "elaborate, complex, and rather clumsy contrivance, of superseding a number of institutions which up to this time have done their work exceedingly well and are doing it better every day." He proceeds to deprecate any interference with vested interests, or with the prestige of institutions which have been and still are extremely valuable. The admirable way in which these have done their work, has wrought an effect which has been on several occasions described by ourselves, as the natural result of the forces which operate in this field when they are untrammeled by law. The speaker proceeded to show that henceforward, as heretofore, students would throng to obtain their qualification of those corporate bodies which had acquired a great and noble prestige; while those who had neglected their duties and "in one or two cases had actually disgraced themselves, would sink into oblivion and come to a happy euthanasia, in which their misdeeds and themselves would be entirely forgotten." We should seek in vain to describe more aptly the condition of affairs in this State, where the institutions of medical learning, which were in existence and had acquired an honorable prestige before the establishment and intervention of a State law touching their affairs, are to-day still existing, still adding to their prestige, still honorably discharging their high functions, not because of the law, but in the face of a law which, in certain particulars at least, has worked toward the limitation of their power.

Referring to the question of preliminary education and preliminary examination of students, previous to the four years' curriculum in medicine, we are scarcely surprised to hear the lecturer say, that the young Briton presents himself, in all prob-

ability absolutely ignorant of the existence of science, having never heard of chemistry or of physics, and without the smallest conception of the outlines of pathological research. The remedy proposed for this condition of affairs, is not what many of the ardent advocates of reform in the standards of American medical education would either suggest or advocate. It is not to make the examination more rigorous, to exclude a larger number of applicants, to reject a larger number of those who are determined in their minds, either by the nobler and better or by the cheaper and meaner avenues, to enter the medical profession. Professor Huxley is indeed sorry to believe that the general education examination is "entirely futile." His plan is, admitting it to be practically hopeless to extend the period of professional study beyond the twenty-second year, to prolong the course, as it were, backward. After the sixteenth or the seventeenth year of life, the time might be usefully employed, not in an education preliminary to the study of medicine, but as a matter of fact in that study itself. Thus, elementary physics, chemistry, biology, anatomy, physiology, physiological chemistry, and physiological physics might be then profitably studied, going over a field which has become so large that it is utterly impossible that any man in it should be, under the present system, competently taught by a competent teacher.

Professor Huxley's suggestion that these so-called "institutes of medicine" should be taught in the earlier period of study in one or more separate institutions; and the more practical branches later, in the medical schools of his own country, is not only practically valuable itself, but full of suggestiveness to those who are connected with American schools. The latter are multiplying yearly under the stimulus of the ambition of men anxious to become preceptors in medicine. Many of the latter reside in towns of relatively small population and inferior medical opportunities. Among existing institutions, it is needless to add that there are those of a respectable character and legitimate authority, whose situation and opportunities are greatly inferior to the standard of requirements for a medical university of high-class position. The benefits that would assuredly result from a division of labor between these several institutions, it would be diffi-

cult to exaggerate. Let those whose facilities are inferior and whose resources are inadequate, devote themselves exclusively to the preliminary instruction of students in these so-called "institutes of medicine;" and the larger schools, situated in the great metropolitan centers, with unrivaled facilities and practically unlimited clinical material, will willingly give themselves especially to the practical teaching connected with disease and injury, which is the great and pressing requirement of him who would be a practitioner of medicine. The medical degree would naturally be conferred by the latter. The realization of such a scheme, which should not be hastily pronounced either visionary or impracticable, would inure to the benefit of both classes of schools, as also of the general profession. It would prolong the period of medical study, without insisting that the faithful, painstaking, and ambitious American student should pass the best portion of his earlier manhood within the shadow of a university, without repelling from the ranks of the profession some of those well qualified by nature to enter them, and without inflicting a damage upon corporate bodies which are already, with credit to themselves and with usefulness to the world at large, improving by all the means which wealth and knowledge can command, the character and requirements of the medical college curriculum in America.

In the last issue of this JOURNAL we copied an item from the *Peoria Medical Monthly*, in which reference was made to a handbill, ostensibly issued by a person by the name of J. B. Findley, announcing that Professor J. E. Harper, of the Chicago College of Physicians and Surgeons, was about to visit Bloomfield, Iowa, and soliciting the attendance there of patients affected with disorders of the eye and ear.

We take special pleasure in saying that after a careful investigation of all the facts in this case, it has become perfectly clear, that Professor Harper is and was entirely innocent of any attempt whatever to advertise himself in this manner; that he had no collusion or sympathy with Findley in the printing and circulation of this handbill; and that he has our sympathy

since he has really suffered from the well meant but exceedingly ill directed intentions of a friend.

We are pleased to add that Professor Harper has the full esteem and confidence of the profession in this city, and can be trusted to engage in no attempts unworthy of his high reputation as a physician, observing with strict regard all the proprieties of the profession.

HYPODERMIC INJECTIONS OF ETHER IN CASES OF PNEUMONIA.

In cases of pneumonia where the disease is rapidly progressing and for the complications of it, hypodermic injections of ether have a very beneficial effect. The stimulant action is especially noticed in cases of great prostration and where the sputum cannot be ejected from the bronchial tubes. Immediately after the injection is made—the pain which the injection provokes having rapidly subsided—the respiration becomes easy, the pulse is strong and normal, and the tongue gets its natural color and is moist. In time of three minutes the exhalation of ether indicates that it has entered into the lungs, and it takes several hours before the effect is over. The natural crisis is accelerated, and the complications are avoided. The injection is made by the usual Pravay syringe, and one gramme of ether used for one injection. The effects are much quicker than with morphine, and the patient never acquires a use of it like in morphine. It should be applied only in difficult cases causing sometimes paralysis of certain groups of muscles.—*Revista Medico—Quiruraquia.*

Selections.

A LECTURE ON THE TUBERCLE-BACILLUS AND PHTHISIS. Delivered at Charing Cross Hospital by T. HENRY GREEN, M.D., F.R.C.P., Physician to the Hospital, and Senior Assistant-Physician to the Hospital for Consumption and Diseases of the Chest, Brompton.

GENTLEMEN: The discovery by Dr. Koch of the organism concerned in the production of tuberculous diseases, seems destined to exercise a more important influence upon practical medicine than has any previous outcome of pathological research. This influence is already marked, and although the discovery is but a few months old, both the profession and the public are recognizing its importance, and are actively engaged, by means of respirators and other weapons, in combating the bacillus to which Koch has introduced us. Now, gentlemen, the announcement of any new and great discovery in medical science is apt to unduly divert us from those which have preceded it; and we are, perhaps, rather liable to allow our opinions to be influenced by the new, to the exclusion of the old. This danger I cannot help thinking we are beginning to incur in connection with the tubercle-bacillus. It is not my purpose now to describe to you Koch's all-important investigations, neither to venture to criticise the inferences which have been drawn from them. In dealing with such complex pathological problems, investigations require to be repeated before the results obtained from them can receive unconditional acceptance. I shall, however, to-day, assume the truth of the proposition that tuberculous processes are infective in their nature, and are due to the presence of a specific organism—the bacillus of

Koch; and from this standpoint I wish to consider the subject more especially as it concerns pulmonary phthisis; and I shall endeavor to place before you as briefly as I can, a few considerations which appear to me to be of some practical importance in this connection.

In the first place, then, let me ask you to bear in mind what has been the tendency of pathological teaching respecting phthisis during the past few years. This is, I think, fairly represented in some propositions which I submitted to you when speaking upon this subject more than a year ago. Amongst these you will find the following: 1. The morbid processes which lead to phthisical consolidation of the lung are inflammatory in their nature; by which it is simply meant to imply that they owe their origin to some kind of injury of the pulmonary tissues. 2. The injury of the lungs which leads to phthisis is mainly inflicted through the medium of the bronchi, and consists in some condition of the respired air. 3. It becomes *increasingly probable* that this injurious influence of the respired air is due to the presence in it of *minute organisms;* although whether these organisms are specific, and whether they are themselves the causes of the phthisical process, is at present quite uncertain. 4. In most cases phthisical consolidation of the lung differs from other forms of pneumonic consolidation, inasmuch as it exercises an injurious influence upon the adjacent and distant pulmonary tissues, and thus tends to spread. To this *infective* property, which varies in degree very considerably in different cases, and under different circumstances, the progressive character of phthisical consolidation is largely due.

You see, therefore, that our previous notions of phthisis have, so to speak, prepared us for the discovery of Koch. The tubercle-bacillus is the element that was wanting to establish the truth of our pathology as far as it had gone. But Koch's investigations do much more than this; not only do they show that the infective nature of tuberculous processes is due to organisms, but they appear to prove that these organisms are specific—that tuberculosis is produced by Koch's bacillus, and originates in no other way. This is, undoubtedly, by far the most important advance that has yet been made in the pathology of those diseases. But

even now our knowledge is quite incomplete. We have yet to learn what conditions are necessary in order that the bacillus may exercise its injurious influence; for it must, I think, be admitted that something more is required than the mere presence of the organisms.

The mode by which the bacillus obtains an entrance to the lungs is undoubtedly, in all but quite exceptional cases, by means of the respired air. The sputum of phthisical patients abounds in the organisms which, as Koch has shown, retain their vitality after the sputum has dried up, and thus becomes capable of dissemination as dust in the atmosphere; they are, perhaps, also contained in the breath. The source of infection must thus be very generally present. In some situations, as in institutions set apart for the treatment of consumptives, the atmosphere must probably be impregnated with the contagium, and yet how exceedingly rare are instances in which it can be shown that the disease has been communicated. Although isolated cases of probable infection have been met with by Dr. Hermann Weber and others, the evidence of clinical experience is altogether against the contagious nature of phthisis. Notwithstanding, Koch's investigations appear to prove that it is a truly contagious, *i. e.*, communicable disease. It is, however, certainly communicable only under conditions which comparatively rarely obtain. A knowledge of the conditions which are necessary in order that the tubercle-bacillus may produce tuberculosis, is therefore what is now to be desired. We want to know the life history of the contagium. This knowledge must undoubtedly await further experimental research; but in endeavoring to obtain it, I believe we shall again do well to consider some of our old-fashioned notions of pulmonary pathology.

In considering what conditions are necessary in order that the respired bacillus may produce phthisis, I would say, in the first place, that it is probable that this result is in no way influenced by the possibility, or otherwise, of the organisms obtaining a free access to the pulmonary tissues. The bacilli are so minute that they must readily enter the alveoli, and probably also, like the particles of inhaled carbon which give rise to the normal pigmentation of the lungs, be able to penetrate the pseudo-

stomata of Klein, and thus get into the lymph-channels. We must look, therefore, to the pulmonary tissues with which the organisms come into contact. Some abnormal condition of the lung would appear to be a necessary factor in the process. Here there are, I think, two well known elements in the pathology of phthisis, a consideration of which will help us in our inquiry—I mean the apicial distribution of the pulmonary lesion, and the influence of inherited predisposition.

The apicial distribution of the pulmonary lesion would appear alone to be sufficient to show that something more is necessary than the mere presence of the organisms. The causes of this distribution are, as you are aware, to be sought for in the diminished range of respiratory movement which obtains in the highest portions of the lungs. As the result of this diminished movement there is, in certain conditions of health, a tendency to stagnation of the blood-stream in the pulmonary capillaries. The stagnation of the circulation leads to more or less injury of the walls of the pulmonary vessels; the injured vessels are no longer capable of completely retaining the elements of the blood, and the slight leakage thus induced favors active changes in the alveolar epithelium. We have, therefore, in certain individuals, and under certain circumstances, this tendency to slight congestion and inflammation in the highest portions of the lungs; and this tendency appears not only to determine the apicial distribution of the pulmonary consolidation, but its outcome—the presence of inflammatory products, however small in amount, *probably* furnishes one of the conditions necessary in order that the bacilli may cause phthisical disease.

The influence of inherited predisposition is so marked, that its consideration must necessarily occupy a prominent place in any study of the pathology of phthisis. As to the nature of what is transmitted—although, accepting Koch's conclusions, this may be in quite exceptional cases a specific organism or virus, as in the case of syphilis—speaking generally, it is in all probability simply a tendency to disease. Without discussing this subject it may, I believe, be said that the tendency consists in some feebleness of the constitution in general, and often of the lungs and other organs in particular. As a result of this feebleness there

is usually a want of constitutional vigor; the power of resisting injurious influences is diminished, and the lungs, and often other organs and tissues, which are especially weak, are, as a consequence, abnormally liable to become inflamed. Further—this inherited weakness not only renders certain organs abnormally liable to inflammation, but also abnormally incapable of recovering from the effects of the inflammatory process; and thus there is more or less tendency to a retention and accumulation of the inflammatory products in the affected area. This tendency to accumulation and infiltration is, as you know, the most important histological characteristic of scrofulous inflammations.

You see, therefore, that the result of any inherited tendency to phthisis must necessarily be to favor the occurrence of those congestive and inflammatory conditions in the apices of the lungs, the existence of which, as we have said, probably constitutes an important factor in the pathological history of the bacillus. General feebleness and want of vigor lead to loss of muscular strength and weakness of the heart, and thus tend to prevent the full expansion of the chest, to cause a stooping posture of the body, and to impair the force of the circulation—all conditions favoring blood-stagnation in the highest portions of the lungs. Further, the toneless condition of the blood-vessels and the poverty of the blood with which the constitutional feebleness is so often associated, furnish the conditions which are the most favorable to transudation.

Lastly, in connection with this part of our subject I must ask you to bear in mind that all important factor in the pathology of phthisis—the state of the general health. Quite apart from any inherited constitutional feebleness there can be no doubt that an impaired state of health very greatly favors the development of the disease. This fact gives additional support to the view we have been taking, inasmuch as any acquired weakness must necessarily play the same *rôle* in the causation of apicial stagnation and exudation as the inherited feebleness to which we have alluded. It is when the two are associated, as they so frequently are, that we have the conditions most favorable to the development of the disease.

We are now in a position to return to our original question—

what conditions are necessary in order that the respired bacillus may produce phthisis? It seems *probable*, I think, from this brief survey of our old pathology that one of these conditions, at all events, is the presence of some inflammatory products within the pulmonary alveoli. Whether such products favor the growth of the organisms, or whether the presence of the organisms leads to the development of some infective substance in the products, I shall not attempt to discuss. The answer to such and many other questions must, as I have stated, await further investigation. I would, however, here remark on the fact that it is alveolar and not bronchial inflammation which especially favors the development of phthisis; and it is interesting to note in this connection that Koch's investigations show the necessity of *prolonged* contact of the bacilli in order to produce tuberculosis. Such prolonged contact is obviously much more likely to occur in the air-vesicles than in the bronchial tubes.

It appears, therefore, from the present position of our knowledge respecting the pathology of phthisis—accepting the truth of Koch's investigations—that two conditions, at all events, are necessary in order to produce the disease: the presence of the tubercle bacillus, and some abnormal state of the pulmonary tissue with which it comes into contact—an abnormal state obtaining in the very great majority of cases in the highest portions of the lungs, and probably depending, for the most part, upon inherited or acquired constitutional feebleness. Such being the case, we have now to consider how far this teaching ought to influence us in our practice. To what extent is Koch's discovery likely to aid us in the diagnosis and prognosis of the disease? and, above all, what indications does it afford with reference to its treatment? The answer to such questions must necessarily await prolonged and careful clinical study. At present it is impossible to do much more than make suggestions on these heads.

Diagnosis.—The tubercle-bacillus is to be found in phthisical sputum. An examination of the sputum may consequently prove a valuable aid to diagnosis. Thus far, the investigations of various observers appear to show that the organisms exist in all cases of this disease. This is important, as it tends to support the view which we have always taught here—that there are

no distinct pathological varieties of phthisis; that the attempts so often made to subdivide the disease have no pathological basis. When it can be shown that the bacillus is present in certain cases of phthisis whilst it is absent in others, we shall be prepared to admit the existence of more than one form of the disease.

If some abnormal condition of the pulmonary apex necessarily precede any injurious influence of the bacillus, it becomes an interesting question as to how far such a condition can clinically be recognized. Although I cannot now support my belief by any carefully recorded facts, my impression is that cases are occasionally met with in which what is probably this pretubercular stage exists. In weakly individuals, in whom there are no marked lung symptoms, and in whom an examination of the chest is made, perhaps on account of cough which is really of gastric or pharyngeal origin, a few obscure, scattered crepitant *râles*, without any signs of consolidation, are sometimes discovered at one or both apices. In the course of a few days, after tonic treatment, these signs disappear, and there is no subsequent evidence of phthisical disease. In such cases, is not the condition of the pulmonary apices closely allied to that so common in the most dependent portions of the lungs of weakly subjects confined to bed, which gives rise to that transitory crepitation heard with the first few deep inspirations?

Prognosis.—It appears that there is a definite relation between the number of bacilli and the intensity of the phthisical process, so that the examination of the sputum may afford information of much prognostic value.

Treatment.—We now come to the most important part of our subject—that of treatment. What is the practical teaching of Koch's discovery with reference to the prevention and cure of phthisis? If our pathological conclusions be even only partially true, they clearly indicate, I think, the necessity of carefully distinguishing between the bacillus and the conditions which favor its influence, and of directing our treatment to both. We must endeavor to prevent the access of the organism, and, if possible, to destroy it after it has effected an entrance; and we must also strive to maintain a healthy condition of the pulmonary tissues, and thus prevent the occurrence of that tendency to apicial

stagnation which appears to be such an important, if not essential, factor in the disease. The latter of these indications is, I believe, as important as the former; and it is, perhaps, rather in danger of being lost sight of in the very natural eagerness with which attention is now being directed towards the bacillus.

Firstly, then, with regard to the condition of the lung which favors the influence of the bacillus. Here it is only necessary to remark that, whatever promotes a vigorous state of health, will, by improving the condition of the blood, the nutrition of the vessels, the activity of the circulation, and the exercise of the respiratory function, tend to prevent that stagnation and transudation in the highest portions of the lungs, the etiological importance of which we have so especially insisted upon. The value of treatment which has for its object the fulfillment of these indications in the prevention of phthisis, it is, I believe, difficult to over-estimate; and its usefulness is almost equally valuable when the disease is established. I cannot but think that, in the meantime, such treatment promises better results than any attempts to attack the specific organisms.

Secondly, the tubercle-bacillus. The consideration of this naturally divides itself under two heads: (*a*) the prevention of its access, and (*b*) attempts to destroy it when the disease is developed.

(*a*) The prevention of the access of the bacillus. The present position of our knowledge appears to point to the desirability of adopting measures for the disinfection and destruction of the sputa of patients suffering from phthisis; and perhaps, also, of the alvine secretions, when there is any evidence of tuberculous disease of the bowel. It also raises the question as to how far it is desirable to allow individuals who are not consumptive, but who inherit a phthisical tendency, and especially when such individuals are out of health, to *intimately* associate with those who are suffering from the disease. If our pathology continues to move on the same lines, this subject may become one requiring the consideration of those who manage our hospitals.

(*b*) The destruction of the bacillus after the disease is established. Attempts to do this are made principally by means of antiseptic inhalations. This is the fashionable, though perhaps

somewhat misdirected, therapeutics of the day. A respirator charged with some antiseptic, such as creosote or carbolic acid, is now being largely used in the treatment of phthisis. Although I should be very sorry to unfairly criticise such treatment, I cannot but think that the evidence that its usefulness is in any way dependent upon its destruction of the bacilli, or of any infective substance which they may originate, is wanting. It seems to me much more probable that such inhalations, when beneficial, are so mainly through the favorable influence which they exercise upon the mucous membrane and secretion; and when, as is so often the case, they are combined with chloroform, they will also act as direct sedatives. What we want are cases of early and progressive phthisis in which antiseptic treatment alone, without adjuncts, is followed by marked improvement. When it can be shown, *e.g.*, that the pyrexia of early phthisis is reduced by such treatment, we shall have evidence pointing to the influence of the germicides upon the bacillus of considerable value. We are now making some observations in this direction, but, at present, with negative results. Whilst, therefore, I do not wish to be understood to discourage the treatment of phthisis by antiseptic inhalations, I think we must be careful as to the interpretation we put on our results. The treatment of phthisis and of other pulmonary diseases by means of a medicated atmosphere has been greatly stimulated by Koch's discovery. Such treatment has undoubtedly been too much neglected in the past, and its prosecution promises the best results. But, in the meantime, I think we have no evidence that we are able by such means to influence the tubercle bacillus; although, if Koch's investigations be true, the discovery of some agent which, by destroying it, will arrest its injurious influence, is obviously the greatest desideratum.—*British Medical Journal.*

THE FREQUENT REPETITION OF DOSES. By JOHN W. MARTIN, M.D., M.Ch., Sheffield.

[Some months ago we published in full Prof. Smith's article referred to below. Dr. Martin has made such a useful compila-

tion of the several matters of interest contained in the article, that we reproduce it for the benefit of our readers]:

The following table of drugs, and their method of exhibition, has been compiled from a recent article in the *New York Medical Journal* by Dr. A. A. Smith, Professor of Materia Medica in Bellevue Hospital Medical College. The subject is one of great interest to practical men. The compiler has frequently found marked benefit to follow a change of dosage, in the direction of smaller amounts and greater frequency of repetition.

DRUG..	DOSAGE.	DISEASE.
Chlorate of potash.	Gr. j. every half hour.	Scarlet fever, diptheria, tonsillitis, etc.
Croton chloral.	Gr. ss. Ditto.	Neuralgia.
Note.—Solution of a grain to the drachm is almost tasteless.		
Salicylate of sodium.	Gr. ij. hourly or half-hourly.	Urticaria (acute).
Note.—Useless in chronic urticaria or that produced by balsam copaiba.		
Fowler's solution.	Gr. ss. half-hourly for 6 or 8 doses.	Vomiting after a debauch. Drunkard's morning vomiting. Vomiting of pregnancy.
Liquor potassii arsenitis.	Ditto.	Ditto
Jaborandi (fl. ext.), with or without digitalis.	Min. v.-x. hourly or half-hourly.	Produces copious perspiration, without causing any unpleasant heart symptoms.
Sulphate of atropia.	A teaspoonful of a solution of one 1-100th of a grain in a tumbler of water hourly or half-hourly.	Supposed croup, which is usually false croup of a reflex origin.
Note.—If the child's face flushes, and physiological action of drug appears, frequency of dose to be diminished.		
Bromides.	Grs. j -ij. every 10 or 15 minutes.	Nervous disturbances and transitory disorders of children.
Tr. Chamomille.	Min. j. every 15 or 20 minutes.	Insomnia of nervous, excitable sensitive children.
Vin. ipecac.	Gtt. j. every 15 or 20 minutes	Vomiting or diarrhœa.
Calomel.	1-60th of a grain every hour for 10 or 12 hours.	Relieves the headache of syphilis occurring at night.
Note—It is not to replace the iodides. This is Trousseau's method. The author found it successful by the second or third night.		
Calomel.	Drachm j., every 10 or 15 minutes, of a solution of gr. j. to the pint of water.	Vomiting or regurgitation of food in the case of nursing children.
Hyd. c. cretâ.	Gr. 1-24th every 15 or 20 minutes.	Vomiting and non-inflammatory diarrhœa of children.
Hyd. bichloridi.	Drachm j., every hour, of a solution of gr. j. to the quart of water.	Diarrhœa in children, with mucous passages and inflammatory symptoms.
Tartar emetic.	Drachm j., every half-hour, of a solution of gr. j. to the quart of water.	Wheezing and cough of slight bronchitis in children.
Tr. nucis vomicæ.	Gtt. j. every 10 minutes.	Sick headache, not of a neurotic origin.
Note.—To be given immediately or soon after meals.		
Cantharides.	Min. j. every hour.	Vesical catarrh.
Tr. digitalis.	Gtt. j. hourly or half-hourly.	Organic heart disease where digitalis is indicated.
Note.—Gives greater relief without liability to ill effects.		
Castor oil.	Gtt. v. every hour in water, with sugar and gum.	Diarrhœa of children, with straining, slight inflammation and passage of jelly-looking matter, but not true dysentery.
Tr. of pulsatella.	Min. ij. every hour.	Orchitis, epididymitis and dysmenorrhœa, not of a membranous, obstructive or neurotic character.
Note.—Affords greater relief than any other method of treatment.		

DRUG.	DOSAGE.	DISEASE.
Calabar bean.	Gr. 1-50th every half-hour for 6 or 8 doses. Then stop for 3 hours, and again similarly repeat.	Flatulence, fluttering and palpitation of the menopause.
Ergot (fl. ext.).	Min. j every half-hour for 5 or 6 hours.	Amenorrhœa, not due to anæmia. To be given the day before and again on the day on which it should occur.
Aconite (tr.).	Min. ⅓ to ½ every 15 minutes.	Febrile disturbance, cold in the head, cardiac hypertrophy with palpitation, severe headache, disturbances of nervous system due to increased force of heart-beat.
Note.—Effects must be watched. Dose regulated accordingly.		
Hamamelis (tr.),	Min. ij every half-hour.	Controls hæmorrhages.
Belladonna (tr.).	Min. j. every half-hour for 8 or 10 doses; then cease.	Nasal catarrh and bronchitis with free secretion. Pulmonary œdema, with failure of heart-power.
Note.—Retards exudation of serum; overcomes failures of heart power.		
Chloride of ammonium.	Grs. ij., combined with min. x-xv. of tr. cubebs every half-hour.	Acute pharyngitis, superficial inflammations of the other tissues of the throat.
Note.—If throat inflammations are due to the gouty diathesis, add to mixture min. x. of the ammoniated tincture of guaiac, and give every hour.		
Citrate of caffeine.	Gr j every half-hour.	Headache of migraine.
Gelseminum (tr.).	Min. iij. every half-hour.	Neuralgias about the head and face.
Guarana (fl. ext.).	Min. xv. every 15 minutes for 4 doses; then, if no relief, increase to min. xxx.	Headaches, especially those which are periodical and not of malarial origin.

—*Med. Press and Circular.*

TWO CASES OF POISONING WITH ILLUMINATING GAS SUCCESSFULLY TREATED BY THE INHALATION OF OXYGEN.* BY ALONZO CLARK, M.D., LL. D., Emeritus Professor of Pathology and Practical Medicine in the College of Physicians and Surgeons.

So far as I know, these two cases of poisoning with illuminating gas are the only cases of this sort on record in which the treatment by the inhalation of oxygen has been resorted to. The histories of the cases, somewhat condensed from the written reports of the house physicians, are as follows:

CASE I.—A woman, forty years old, was brought to Bellevue Hospital and admitted into my service May 30, 1882. She and her daughter had gone to bed the night before, and about noon they were found in a state of unconsciousness, the room where they had been lying for fifteen hours being filled with illuminating gas, the odor of which they had noticed on going to bed. On recovering from her insensibility, the patient could remember nothing that had happend from the time of her going to bed until she regained consciousness in the hospital ward, after the lapse of 24 hours.

* Related at a meeting of the New York Medical and Surgical Society, February 24, 1883.

At the time of her admission, she was found to be suffering from pulmonary œdema; the radical pulse was scarcely perceptable, she was unconscious and cyanotic, her extremities were cold, there was trismus with rigidity of the flexor muscles, the urine was passed involuntarily, the pupils were slightly contracted, and a frothy mucus issued from the mouth. Her temperature was 96-5°F., and her respiration 40.

I entered the hospital shortly after she was brought in, and directed the inhalation of oxygen. Its administration was kept up for three hours. In addition, dry cups were applied over the chest, and tincture of digitalis was given endermically—in all, to the amount of thirty minims. Whisky also was given subcutaneously, and hot water bottles were applied to the extremeties. Occasionally, too, the patient was aoused by flagellation.

The treatment extended over a period of four hours, at the end of which time the woman began to show signs of returning consciousness; the pulse became more perceptable and regular, warmth returned to the extremities, and the temperature and the respiration were found to be normal. The next day the patient was able to tell her own story, and was soon afterwards discharged.

CASE II.—The daughter of the first patient, a girl twelve years old, was admitted at the same time, in Dr. Loomis' service. Her breath had a very strong odor of gas; she was comcompletely comatose, the breathing being stertorous, the eyes closed, the conjunctivæ insensitive, and the pupils contracted and insensible to light; the pulse was 156, extremely feeble, and occasionally intermitting; the respirations were 30 and shallow. There were clonic spasms involving the left side of the body, with bird claw contraction of the fingers of both hands. The urine and fæces were passed involuntarily. The face and clothing showed evidence that the patient had vomited a good deal before reaching the hospital, but after her admission there was no vomiting.

Seeing that my patient was being treated by the inhalation, the house physician, Dr. Pryor, resorted to the same treatment in this case, and, in addition, gave a hypodermic injection of a sixtieth of a grain of sulphate of atropine. This patient also recovered.—*New York Medical Journal.*

DISEASES OF CHILDREN—PALATABLE DRUGS FOR CHILDREN. FREDERICK CHURCHILL, M.D., F.R.C.S., Surgeon to, and Member of the Drug Commtttee, Victoria Hospital for Children, contributes the following to the *British Medical Journal:*

We owe it, probably, much to the persistency with which practitioners of the sterner sort have impressed their rhubard and black draughts upon rebellious, in defiance of the protestations of nurses and mothers, that "the tasteless globule" has found such favor with the weaker sex. I could tell of several cases where the children have been entrusted to the care of a homœopath, while the parents luxuriate under the usual heroic treatment of the orthodox practitioner. We must not forget to swim with the tide. Children of this enlightened age are far more pampered and spoilt than those of the previous generation. Mothers seem unable to control their feelings; or, it may be, that, with a smattering of physiclore, they find that there is no longer any necessity to cling to the once inevitable and nauseous potion. We must say a word, too, for the children. None of us like compulsion. It must not be forgotten that there is often more harm done to a child's nervous system, by cramming the draught down its throat, than all the good the nauseous drug was supposed to effect. Children will often take days to recover their equilibrium after a protrected encounter with the medicine-glass in the nursery, under the stern discipline of a would-be conscientious nurse. Judging from the varied susceptibilities and dispositions of the children under my care, some of them having very resolute wills, others possessing—I cannot say endowed with—mothers of a pronounced æsthetic temperament, to whom everything is a bore, except a novel to read, and a sofa to lie upon, it becomes most important to formulate a line of treatment that will satisfy such requirements.

This class of children are generally ruled by a domineering old woman they call "nurse," displaying a maximum of "tall talk," with a minimum of what she delights to call "common sense" (and very common, indeed, it proves to be). The medical man must cultivate a habit of attacking such a stronghold of

prejudice and conceit by a series of carefully planned flank movements, in such a way that the nursery magnate may be drawn, against her own convictions, into a pliable frame of mind, sufficient to enable the medical man's physic and regimen to stand a chance of being attended to.

To attempt to invade the sanctum of a nursery where the lady-paramount is cajoled into the idea that "nurse is a treasure," and prefers rather to foster the notion, than to care to have her eyes opened to the actual state of reigning ignorance, requires all the practical art of the medical man gradually to overcome and remedy.

Undoubtedly the ailments under which children for the most part suffer, belong to the preventable class. They are due sometimes to overfeeding; very often to neglect, especially of the calls of nature; and very much to general bad management. With this view, it may be well to presume that the best and most approved mode of treatment for habitual torpidity of the bowels is not medicine, but an enema of soap and water, with occasionally a little castor or olive oil added to the injection. If this do not succeed, and the child's appetite begins to fail, it is an indication for administering medicine by the mouth.

Fortunately, the art of the apothecary comes in to our aid, and we are now enabled to give the most nauseous of drugs—castor-oil—absolutely free from taste and smell, while it retains the full aperient properties of ordinary castor-oil. Messrs. Allen and Hanburys themselves advise that it should be shaken up with three or four times its bulk of hot milk. The viscidity of the oil is thus avoided, and the emulsion produced is scarcely distinguishable from warm rich milk.

If it be desirable to administer an aperient that will act more directly on the liver, and to avoid the unpleasant effects which often arise after taking "oil," the compound rhubarb pill will be found a servicable aperient. Of course, some new method for its administration will be desired, which I shall now detail. Either an ordinary five-grain pill may be cut up, and a portion of it broken in small pieces may be buried in a chocolate cream, which the youngest child will take with avidity; or for children of say five years and upward, I have given one-haf and one-

fourth of a grain of this pill, thinly coated. Half a dozen or so may be taken, like "hundreds and thousands," and washed down with milk or water.

The medicated fruit lozenges are very useful, *e.g.*, tamar indien and laxora lozenges. Podophyllin is probably one of the active ingredients in these lozenges. Only a small portion of a lozenge must be given to a child. The objection found with these is that they sometimes "gripe" the little patient. Next to these, perhaps, in efficiency and palatability, is the compound licorice powder, containing senna powder. About a teaspoonful stirred up with warm milk may be taken at bedtime, and a little chloric ether added (about ten to twenty drops). Very few children will object to take fluid magnesia or the calcined magnesia, especially if flavored with the flavor of mulberry or orange.

I have succeeded in making the taste of many powders by the addition of powdered "rose" lozenges. I very seldom prescribe Gregory's powder on account of its nauseous character and bulk. I prefer to combine the rhubarb with bicarbonate of soda about five grains of each. This makes a much more miscible and manageable powder. Given in jam, honey or golden syrup, the taste is altogether covered.

Children will sometimes take the "baum de vie," or decoction of aloes, without objecting much. A little of this rubbed into the stomach of infants will suffice sometimes to procure an action of the bowels. The extract of liquorice may be added to the decoction until the bitter taste is sufficiently masked. Children have not really such an aversion to it, for I have known them to lick off the aloes from their fingers when put on to prevent them from sucking them. Powdered aloes, about half a teaspoonful, may be given mixed with brown sugar. The electuary of senna is taken without difficulty by some children, also the syrup of senna and the infusion with prunes. The effervescing purgative lemonade is a very agreeable drink, as also half a seidlitz-powder flavored with lemon-juice.

Turning now to febrifuge mixtures, there is not much need of flavoring to mask the flavor of these. Sweet niter, acetate of ammonia, spirits of chloroform, are all pleasant drugs to take. The nitrate and chlorate of potash are rather saltish, but the sal

prunelle and Wyeth's compressed tablets will be taken by the bigger children without much protest. The syrups of orange, lemon and mulberry will come in as agreeable and cooling adjuncts. Cough-mixtures can generally be made very pleasant by the addition of syrup of squills, of tolu, etc.

As regards tonics, some considerable skill will be necessary efficiently to cover the bitter flavor. Children will take the saccharated carbonate of iron very well, and also steel wine; but if we attempt to give the bitter infusions, there is sure to be rebellion in the nursery. Quinine—one of the most valuable medicines for children—can be given without difficulty, either in the form of pill, or, which I prefer, dissolved in syrup of orange, without the addition of any water. This effectually covers the flavor. Quinine wine is useful for the elder children.

Chemical food is, of course, taken with relish, and if recently made is a serviceable tonic; but the phosphates, from their insolubility, throw down very much. The compound solution of the hypophosphites, in ten-minim doses, and the hypophosphite wine, forms a perfect substitute for Parrish's food. Besides having iron in a form which is easily absorbed, the hypophosphite of magnesia serves as a useful antacid and stomachic in this combination.

With a view of putting into practical form these two suggestions, and to systematize the irregular but constant attempts of mothers to keep a little dispensary of their own, I have instructed Messrs Savoy and Moore to fit up a nursery medicine-chest, with a companion guide, to assist mothers, especially those residing in the colonies and far away from medical aid, to treat their own children in such emergencies.

Dr. Frank O. Stockton has been elected to the professorship of Diseases of the Nose and Throat in the College of Physicians and Surgeons of Chicago.

Obituary.

Dr. Frank L. Rea died August 10, 1883, of facial carbuncle, aged 24 years. The disease appeared July 31 as an inflamed hair follicle, causing sensitiveness. The hair was extracted by a friend, and found to be bulbless. It seemed to make an instantaneous and fatal impression on him, and he made an ominous record of the fact in his diary. He wrote:

July 30. A little boil is progressing rapidly on my upper lip to-day.

July 31. Have a boil or carbuncle on my upper lip. *Wonder if it will turn out as Egle's did last summer—i. e., kill me.* Professor prescribes 10 drops Fowler's solution 4 times a day. The carbuncle started yesterday morning as a little sore pimple, and I had Jacobson look at it, and from its apex drew a loose hair, from which the bulb was absent. I then had him paint it with carbolic acid. To-day it has progressed—not being very painful. P. M.—More painful; painted it with atropine, relieving the pain also. Made an incision into it and introducing carbolic acid. It has swollen half way up to my eyelid, and is bearing in that direction. Pulse 96, temperature 99.2 at 9 P. M. I am fully aware of its dangers—Holmes' Surgery, page 890; Bryant, 140. *No post mortem, please.* The surface looks red and angry. Beverly Egle's case ran along as mine for a number of days, probably ten, after it commenced dying of suppurative phlebitis, extending up to the orbit and along the ophthalmic vein into the cavernous sinus. The island of Reil was a mass of pus, and infarctions were found in the lungs.

August 1. Lip and face markedly more swollen this morning,

but not painful. The redness is confined mostly to the surface of the boil. Was out on business this forenoon, and this afternoon attended Professor's clinic at the College, and went over to County Hospital to witness an ovariotomy by Prof. Fenger, but did not feel well enough to stay.

Temperature 92.2 at noon, and 9 P. M., 99.6; pulse 108. Began tincture opii. 15 drops with each dose of Fowler, and oftener if pain requires it.

August 2. Taking on a distinctly carbuncular character. Brawny swelling with tubercular elevations. Pulse 96, temperature 100.

At 2 P. M. took ether, and Professor made an incision across through the indurated tissues about two inches long, and then cauterized thoroughly with caustic potass. the involved tissues. No pus found except size of a pea at the seat of original pimple.

Linseed poultice applied, and took ¼ gr. morphine. Not much pain this afternoon. Ether produced severe vesical irritation. Took three compound cathartic pills at bed time.

August 3. Lip and face very painful this morning. Pills operated well. Pulse 96, temperature 99.6. It has crossed the median line to the other half of lip. Professor injected 15 m. of 1-40 carbolic acid, and painted the surface with pure liquid carbolic acid. P. M.—Pulse 108. temperature 101¾. No chill but chilly sensations. Began bromides; stopped poultice and use carbolic acid lotion.

This ended his personal record of his case, and is taken verbatim from his diary.

August 4. Symptom growing worse, fever high; shiny hot face very much swollen. Pulse 120, temperature 102. Opened left side of lip and cauterized it as the other.

August 5. Face excessively painful; swelling increases; œdematous condition of sides of face from obstruction of veins. Pain across chest, which settled into a severe pleuritic pain in right side. No cough or expectoration. This pain disappeared in a day or two under warm applications. Pulse 120 to 130, temperature 103¼.

Sulph. quin 20 grains every 12 hours; mu. tincture ferri 40 drops every 4 hours; omit Fowler's solution.

August 6. Met with Dr. John E. Owens in consultation. A red band extended up left side of face an inch wide, reaching from lip to orbit. Œdema still continues increasing—120, 104½. Delusions begin to manifest themselves. No change of treatment. Opened further, and cauterized the left wound.

August 7. Mind markedly disturbed. No other marked change. Temperature, A. M., 103¼; P. M., 103¾. Pulse, 120 A. M; 108-120 P. M. Iodoform applied to wounds.

August 8. Delirium increasing,—describes what he sees as an infinite number of suicides on the walls and ceilings of his room. Then a change in which the whole scene is a broad, quiet ocean. Can only be arrested in his wanderings for a few minutes a time; pulse and temperature rising; lip swollen intensely; openings appear on the mucus surface of the lip; complains of pain across the forehead, and has for some days. Pleuritic pain ceased.

August 9. Very delirious all night; symptoms all worse; had to be restrained till near morning, at which time he became unconscious; so remained till he died—10th at 11 A. M.

There is probably little reason to doubt the pathology, as the disease is described and here confirmed as suppurative phelebetis, and the anatomical connection between the lip and brain promise the best explanation of its exceptionally fatal tendency. There was a strumous tendency in the case, but whether it modified it is uncertain. But little need be added. The marked peculiarities were its uninterrupted progress, and his unmoved opinion of its necessary fatality. I do not think he ever wavered for a moment on this, and tho', when I reasoned with him and endeavored to divert his mind and show him the direct tendency of this central fact in attracting the disease and producing the very thing we were trying to avert, he would seem to assent to me, and he wouldannounce the fatal prospect to the next person to whom he talked.

He predicted the progress of the disease, the occurrence and time of his delirium, and arranged his affairs with a quiet confidence born of conviction, and no amount of ridicule or reason affected him in the least; and this was not the result of superstition, but of knowledge and experience and a distrust of his recuperative power, alarmed as he always was at disease in himself.

In a similar case I should feel at a loss for any suitable treatment, but if the nature of the disease is properly diagnosed I should be tempted to destroy the facial and cerebral venous connection early by a transverse incision extending from the side of the nose across beneath the orbits, cauterizing it with actual cautery, caustic, potash or strong acid, following this with the applications to the region so treated with proper constitutional treatment.

Dr. Rea was a young man of unusual promise, a careful, diligent student, kind disposition, winning manners, and bade fair to attain an enviable position in his profession. He graduated at the Chicago Medical College in 1882, and was appointed interne to St. Luke's, completing his term of service April last. His loss will be deeply felt in the positions he held, the College of Physicians and Surgeons, as well as by his numerous friends and acquaintances, but more than all by his heartbroken parents whose bright hopes and fond anticipations for him were doomed to such sudden blight.

R. L. R.

BOOKS RECEIVED.

Lindsay & Blakeston's Visiting List for 1884. Twenty-five patients, price $1; fifty patients, price $1.25.

Physicians' Memorandum Book and Weekly Visiting List. Thirty-one to sixty-two patients, $1.25.

A Manual of Psychological Medicine and Allied Nervous Diseases. Octavo, 699 pp. Price $5. P. Blakiston, Son & Co.

The Physiological Factor in Diagnosis. I. Milner Fothergill. Wm. E. Wood & Co., through W. T. Keener, 96 Washington St., Chicago.

ANY person having purchased a copy of the United States Pharmacopœia of 1880, and desiring a list of the corrections since made therein, can procure same by sending a two-cent stamp to

WM. WOOD & CO., Publishers,
56 and 58 Lafayette Place, New York.

Items.

"THE LIVING DEATH."—[*The Southern Clinic*, C. A. Bryce, Editor, M.D., Richmond, Va., Oct., 1883. Editorial.]

We received a pamphlet published by Dr. H. H. Kane, of 46 West Fourteenth Street, New York city, and issued to the people of this broad land, far and wide, under the above caption.

On account of the betrayal of professional confidence reposed in him, and on account of the open violation of the Code of Ethics by this Dr. Kane, it becomes our duty to denounce this man as unworthy of recognition by the profession. A brief *résumé* of the contents of *The Living Death* will serve to establish the grounds of our denunciation.

In the "introduction," Dr. Kane announces his great experience in the treatment of opium, chloral, morphia, hashisch, and alcohol habitués, and claims to have at last *discovered* a combination by which any one may be speedily, painlessly, and secretly cured at his or her home by using his preparations; the formula and ingredients are, however, kept secret. He also claims to be so very careful of the communications of all applying to him for medicine, that he has adopted the plan of destroying all letters sent to him. He, after mature deliberation and upon the urgent solicitation of members of the profession all over the country, has consented to issue this circular broadcast to the people to let them know where this inestimable boon may be procured, and finally in order to convince those who are unacquainted with his name and high professional attainments, as to the responsibility of his statements, he has introduced letters and testimonials from the most eminent men of America and England.

This "little brochure" is indeed "the crowning effort" of an unprofessional career. Dr. Kane has already, just within the pale of the code, advertised himself by his publications, and in the last year he has utilized the daily papers of New York and the illustrated periodicals to extend his fame as a specialist. To-day he goes beyond all previous efforts by announcing himself the sole proprietor of a secret remedy; this is bad enough, but he is also bold enough to use in support of his treatment professional endorsements, selected from private correspondence in the past, when this Dr. Kane was a legitimate physician practicing a specialty. As we read these commendatory letters we are surprised at the insolence of the man who dares use his eminent correspondents to advance his advertising scheme, and we find nowhere in these letters any approval of his secret treatment, or any recognition of his ownership of a specific.

From the "drugs that enslave" to *The Living Death* is a long step, the step from scientific labor to charlatanism, and Dr. Kane cannot honestly use letters written to the author of his books to advertise the proprietor of a secret remedy for the habits which he terms a Living Death.

He has voluntarily placed himself among the "cancer doctors," patent medicine men, and quacksalvers generally who flood the country with just such literature as this *Living Death*, and in advertising his nostrum he avows himself no longer worthy professional countenance or support, no longer a scientific physician.

Every paragraph of this remarkable production seems to have been modeled after the blood-curdling style of the "Private Diseases Cured" quack, who first scares his patient into the disease he professes to cure and then makes a fee out of him. To this ignoble company, as to the communion of choice spirits, we commend Dr. H. H. Kane.

We will briefly allude to a particulary unethical proceeding in this advertising pamphlet, we mean the attack on Dr. J. B. Mattison, of Brooklyn, and the use of a private letter from Dr. Mattison to contrast the comparative ability of Mattison and Kane. In this, Kane's charlatanism contrasts most unfavorably with the candor of a gentleman who does not own a secret nostrum, but

who has a wide reputation for intelligence, ability and as an honorable and ethical practitioner.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF MEDICAL OFFICERS OF THE UNITED STATES MARINE HOSPITAL SERVICE. JULY 1, 1883 TO SEPTEMBER 30, 1883.

Bailhache, P. H., Surgeon: detailed as member of Board to examine candidates for promotion, Aug. 23, 1883; detailed as Surgeon-in-charge Cape Charles Quarantine Station, Sept. 5, 1883.

Miller, T. W., Surgeon: granted leave of absence for twenty-five days, August 31, 1883.

Wyman, Walter, Surgeon: detailed as member of Board to examine candidates for promotion, August 23, 1883.

Long, W. H., Surgeon: granted leave of absence for twenty days, Sept. 25, 1883.

Smith, Henry, Surgeon: directed to take charge of quarantine service at the Capes, July 29, 1883.

Stoner, G. W., Passed Assistant Surgeon: granted leave of absence for thirty days, Aug. 24, 1883; to inspect the relief stations along the coast of Maine, Sept. 29, 1883.

Goldsborough, C. B., Passed Assistant Surgeon: granted leave of absence for thirty days, Aug. 29, 1883.

Banks, C. E., Assistant Surgeon: relieved from duty at Portland, Oregon, and to report to the Surgeon-General at Washington, July 10, 1883.

Carmichael, D. A., Assistant Surgeon: granted leave of absence for ten days, Aug. 31, 1883.

Peckham, C. T., Assistant Surgeon: to proceed to Portland, Maine, for temporary duty, Aug. 25, 1883.

Devan, S. C., Assistant Surgeon: to proceed to Portland, Oregon and assume charge of the Service, Sept. 11, 1883.

Kallock, P. C., Assistant Surgeon: to proceed to Philadelphia, Pa., for temporary duty, July 25, 1883; to rejoin his station (New York) July 31, 1883.

Yemans, H. W., Assistant Surgeon: relieved from duty at Sitka,

Alaska, and to proceed to Portland, Oregon, for temporary duty, July 10, 1883; to proceed to San Francisco, Cal., reporting for duty to Surgeon Vansant, Sept. 11, 1883.

Glennan, A. H., Assistant Surgeon: to remain at Norfolk, Va., until further orders, July 29, 1883.

Wasdin, Eugene, Assistant Surgeon: to proceed to New Orleans, La., for temporary duty, Aug. 2, 1883; to proceed to Mobile, Ala., for temporary duty, Aug. 27, 1883; to rejoin his station (New Orleans) as soon as practicable, September 25, 1883.

PROMOTIONS.

Guitèras, John, Passed Assistant Surgeon: promoted and appointed Passed Assistant Surgeon by the Secretary of the Treasury from September 1, 1883. August 31, 1883.

Wheeler, W. A., Passed Assistant Surgeon: promoted and appointed Past Assistant Surgeon by the Secretary of the Treasury from September 1, 1883. August 31, 1883.

RESIGNATION.

O'Connor, F. J., Assistant Surgeon: resignation accepted by the Secretary of the Treasury, to take effect August 1, 1883. August 2, 1883.

APPOINTMENT.

Wasdin, Eugene, M.D., of South Carolina, having passed the examination required by the regulations, was appointed an assistant Surgeon by the Secretary of the Treasury, August 2, 1883.

A DOCTOR'S SANCTUM.

In an article entitled "Rab's Friend," published in the *Century Magazine*, the following description is given of the study of the late Dr. John Brown, of Edinburgh, the well-known author of "Rab and His Friends:"

"The room is crowded with pictures, engravings, books and pretty things of all kinds—nothing, perhaps, very valuable—but nearly all of them with a history; nearly all given to him in one way or another by some one who admired or loved him. The

frame in the middle line on the extreme right of the fireside contains five of Leech's little original drawings; and there is a famous larger one on the same line beyond the head of Tennyson, while beneath is the grand Goldsmith "in his new suit," from Thackeray's "Humorists." The black picture diagonally to the right above him contains the original sketch, by George Harvey, of the girl's head (including his daughter and Dr. Brown's,) made for his picture of "Leaving the Manse," and afterward utilized as "Rab's Friends" in the illustrated edition. Above the bust to the left is the best of the heads of "Rab" by the very clever young animal painter, Edwin Douglass. The white frame to the left of the gas globe shows, by a slight penciled profile likeness, the beautiful head of Mrs. Brown in her prime; that, partially concealed by the other gas globe, is her likeness as a young girl, and immediately below it is her bust; the other bust on the mantelpiece being that of Dr. John Scott, the Edinburgh physician, while the portrait behind is that of John Scott, of the *London Magazine*, who was an uncle or cousin of Mrs. Brown. The engraving in the middle line, immediately to the left of the mantelpiece, is Turner's "Devil's Bridge," over the Reuss, in the Altdorf valley, and the bull-dog's head to the left of it (a fine engraving) bears the inscription, "Not an approach to the great Rab, but—yours, truly, E. Landseer." The picture to the left of young John's bust are, first, a very beautiful and characteristic landscape of Harvey's, much akin in character to that engraved in the illustrated Rab for "Rab's Grave;" and, next, a small but very good likeness of old Dr. Brown, Dr. Brown's father. There is also a wonderfully clever spaniel dog drawn by Turner, and a drawing by Ruskin, both being, I think, presented by Ruskin. Of the books on the table may be noticed two volumes of O. W. Holmes' poetical works, the gift of the "Autocrat," with a letter which gave Dr. Brown as much pleasure as anything which had come to him for years."

THE CHICAGO THROAT AND CHEST HOSPITAL.

A meeting was held recently at the residence of the Rev. William Lawrence for the purpose of organizing in Chicago a

Throat and Chest Hospital. Quite a number of prominent gentlemen were present, and matters were so far advanced that a Board of Directors was chosen, being made up of the following gentlemen: The Hon. Wm. Aldrich, the Rev. Wm. Lawrence, Dr. E. Fletcher Ingals, Dr. G. F. Hawley, and Messrs. C. C. Kohlsaat, W. Howard and Herman Kohlsaat. The hospital will be conducted after the manner of similar institutions in Europe. Persons who are able pay for the service of a physician will not be admitted, the hospital being designed for the accommodation of patients who can only afford small weekly payments, according to their means. The fees and donations will go to the hospital fund. There will be an outdoor department for the treatment of patients, and everything is expected to be ready in a very few weeks. We have made arrangements for the care of in-patients who are only able to pay for board. The outdoor department will be in running order about December 1st.

WE regret very much that the account of the last illness of the talented young Dr. Rea, written by his uncle, Prof. Rea, was not published in the last JOURNAL. The article was lost in the midst of a change that took place in the disposition of forces in the printer's office. It has since been found and appears in this number.

PRESENTATION OF THE CHILD'S HEAD BY THE VULVA AND ANUS.

A primapara, 28 years of age, was attended by a midwife, and the labor pains were regular. When the head progressed, the perinæum was found to be resistant, and the pains continued for 12 hours without effect. Then a physician was sent for, who found the recto-vaginal tissues entirely destroyed, and the head was visible through the dilated anus, as well as through the vulva. The applied forceps soon delivered the child. It is advisable in those cases to apply the forceps without delay.—*Gazette Médicale de Nantes.*